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VALUE JUDGMENTS IN WELFARE ECONOMICS: AN EXAMINATION OF THE COMPENSATION PRINCIPLE AS AN ATTEMPT TO CIRCUMVENT VALUE JUDGMENTS IN THE MARGINAL COST PRICING CONTROVERSY

by

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ABSTRACT

Much of what is now called the "New Welfare Economics" was inspired by attempts to construct a body of welfare theory which was free of value judgments. Curiously, few of the authors who participated in these attempts clarified what they believed a value judgment to be.

One of the primary contentions of this thesis is that a clear concept of a value judgment is needed before either the influence of value judgments on welfare economics or attempts to circumvent value judgments in welfare economics can be fully appreciated. Therefore, Chapter I is addressed to the conceptual problems of defining a value judgment.

One of the most notable attempts to construct a value-free welfare theory centered on the compensation principle. Chapter II traces its development and studies the value judgments that underpin its use.

Chapter III is similarly a literature review; it outlines the development of the marginal cost pricing controversy up to the appearance of Little's <u>Critique</u>.

In Chapter IV it is demonstrated that the same value judgments which are presupposed by the use of the compensation principle were also presupposed by the contributors to the marginal cost pricing controversy. The chapter concludes with the argument that neither the compensation principle nor any other method is capable of circumventing value judgments in welfare economics.

ACKNOWLEDGEMENTS

Like Pinocchio, thesis writers are not born, they are made, and if they, like Pinocchio, have any human virtues, they remain forever grateful to their makers.

The finances for my construction came from both the University of Alberta and the Francis Reeves Foundation. I greatly appreciate the opportunity they provided to continue my studies and to complete this thesis.

Dr. David M. Winch supervised my antics as an academic Pinocchio _cum_ thesis writer. Luckily, he possesses both the shoemakers needle and hammer. He used both unsparingly; the one to dispense with hollow ideas, the other to make a wooden head respond. I have survived his onslaughts, but I fear that they have cost him much time and effort. Only those who have worked under him know how valuable his tutelage is.

In the capacity of typist, Robert Garland suffered the outrages of my spelling and deplorable handwriting; in the capacity of roommate, he suffered much else.

As is customary among graduate students, I wish to thank my wife of six-weeks-standing. I am uncertain what her contribution has been, but I cannot question its existence.

R. K. House

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CHAPTER I

VALUE JUDGMENTS IN ECONOMICS

Part I

The arguments of this study are concerned with value judgments. Presumably, therefore, one of the initial exercises should be an attempt to define a value judgment and to give an indication of its characteristics. Yet, this seemingly basic step is so intricate and complex that many astute economists have exercised the utmost dexterity to avoid it. For example, Robbins, in The Nature and Significance of Economic Science,[1] attacks value judgments without specifying what it is that he is attacking. Similarly, the whole development of the "New Welfare Economics," which was a grandiose attempt to purge welfare economics of value judgments, was carried out without most of the contributors pausing to clarify what a value judgment is. Indeed, it is ironic that this vague phrase has been introduced into the economist's vocabulary by men who have been campaigning for greater precision in analysis and for a "scientific" economics.

One reason implicit in the writings of many economists for not endeavouring to define a value judgment is

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[1] Lionel Robbins, The Nature and Significance of Economic Science (London: MacMillan and Co., Ltd., 1932).

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that it is believed that everyone knows what a value judgment is. Unfortunately, an inspection of the writings of economists does not lend support to such a contention. Notwithstanding this, however, it would be improper to issue a blanket condemnation of economists for their perfunctory treatment of what appears to be a topic of some importance. They are to be spared condemnation and denigration for two reasons.

First, not all economists are innocent of speculating on the nature of value judgments. Secondly, there are convincing arguments for believing that a discussion of the nature of value judgments, even at a very low level of sophistication, should be left to other disciplines, or more explicitly, to the metaphysician. This, however, does not excuse individual economists for failing to clarify what they understand by a "value judgment." Philosophers have been attempting to clarify the nature of value judgments at least since Socrates proclaimed that "virtue is knowledge"; however, unanimity on the nature of value judgments and allied problems is still beyond their reach. Nevertheless, many economists could have avoided elementary blunders if they had chosen to borrow more heavily from the philosophers.

Two of the most recent, and, from the point-of-view of the economist, most satisfactory discussions of the

nature of value judgments are those of Little[2] and Von Mises;[3] although compared to the treatment given the subject by some philosophers, these discussions are at a very elementary level.

Both of Little's contributions appeared in the summer of 1949. For present purposes, the discussion in <u>A Critique of Welfare Economics</u> is more complete and contains everything that is to be found in "The Foundations of Welfare Economics."[4] To maintain some sort of historical perspective, it should be noted here that it was this article and not the <u>Critique</u> that made the path-breaking contribution, especially with regard to interpersonal comparisons of utility.

To the economist, one of the most appealing aspects of Little's discussion in the <u>Critique</u> is that, insofar as it is possible, the discussion is divorced from any particular philosophical school. It is precisely this, however, that is responsible for the lack of refinement; moreover, Little's attempt to make workable generalizations which the economist can use as guides, imposes limits on the complexity of his discussion.

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[2]I.M.D. Little, <u>A Critique of Welfare Economics</u> (2nd ed.; London: Oxford University Press, 1957).

[3]Ludwig Von Mises, <u>Theory and History</u>(New Haven: Yale University Press, 1957).

[4]I.M.D. Little, "The Foundation of Welfare Economics", <u>Oxford Economic Papers</u>, I (June, 1949), 227.

Little begins his exposition by suggesting that there are no words which can be classed as value words;[5] rather, he argues, a word becomes a value word by and because of its context. He illustrates this contention saying:

> It is clear that 'You ought to go home for your father is dying' is a value judgment and that in this sentence the 'ought' has a moral force. On the other hand, in the statement 'You ought to go home if you want to avoid being recognized', the 'ought' has no moral implication.[6]

An inspection of the context of the quote will show that what Little hoped to demonstrate was how a word becomes a value word by the context in which it is used. In fact, he has done much more than this. To anticipate a later phase of his exposition, it can be seen that a value word carries with it "moral force," that a value judgment contains a "value" word, and that, therefore, a value judgment has a "moral force."

In a somewhat disconcerting fashion, Little alters his terminology and begins to speak of ethical judgments.

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[5]It is instructive to compare Little's view with the statement that: "Some studies of value from the linguistic standpoint have sought to analyse what are <u>commonly accepted as valuative terms</u> ('good', 'right', 'better', 'best', 'ought', 'should', 'beautiful', and so forth and their opposites) or valuative sentences ('X is good and so on')." (Italics mine.) Quoted from Ray Lepley, "A Second Sequel on Value", <u>The Language of Value</u> (New York: Columbia University Press, 1957), p. 233.

[6]Little, <u>op</u>. <u>cit</u>., p. 67.

It is not clear whether he wishes the reader to identify these with value judgments or not; it is not until later in the development of the discussion that he proposes to call all judgments which have a "persuasive or recommendatory force," value judgments. It is disconcerting because we do not know if it is permissible to assume that a value judgment has all the characteristics of an ethical judgment. Implicit in the development of the argument is the suggestion that we may.

In analysing the nature of an ethical judgment, Little lends his support to what he believes is the concensus, namely that ethical judgments do not "describe either external or internal facts." He then hastens to add:

> The above view is too simple. It may be the case that I only call a man good when he has certain characteristics and lacks others. I may have some rough and ready criterion of goodness, and when I say that a man is good, I am, then, partly describing him. I am saying that there are certain facts about him -- facts which I regard as sufficient to warrant the use of the word 'good'. But other people will probably use the word in different ways, and refuse to call him good. There is certainly no settled and agreed descriptive usage for ethical words, as there is, to a much greater extent, for such words as 'tall' or 'brown'. This suggests that there must be a reason why people do not agree on how, and when, to use ethical words. The reason is that ethical statements do more than merely describe.[7]

Clearly, there has been a shift in emphasis between Little's original contention that ethical statements may

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[7] Ibid., pp. 67, 68.

describe something and his conclusion that they do more than "merely describe." We seem to be left with the conclusion that ethical judgments will always describe something, but in addition to this, they possess some quality which differentiates them from other statements; presumably this distinguishing quality is the "moral force" which they carry with them. Little elaborates on this in the remainder of his exposition.

He withdraws from the position that an ethical statement does more than "merely describe" and returns to suggest that in some cases it is true that an ethical statement does not describe anything at all. A sentence of the form "You ought not to commit murder" does not, he contends, describe anything; rather it "tells" a person how to or how not to behave. Here Little's cavalier use of his terminology makes the discussion especially nebulous. To say that an ethical statement "tells" an individual how to behave is, he believes, too strong. In the place of "tells" he would substitute "suggests"; the justification for this modification comes from the following passage:

> There may also be an element of telling people how to, or how not to behave. The word 'telling' is however, too strong. If I say 'Smith and Jones are good men', I am not telling anyone to emulate their behaviour. Nor if I say 'Hamlet is a good film' am I telling people to see it if they can. But I am certainly suggesting that they go to see it.[8]

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[8] *Ibid.*, p. 68.

Little would not have found it necessary to substitute "suggests" for "tells" if he had realized, as some philosophers have, that there is a difference between a sentence of the form "You ought not to commit murder," and a sentence of the form "Smith and Jones are good men." This can, perhaps, be more clearly seen if the last statement is put in the following form: "Smith is a better man than Jones." The first statement -- "You ought not to commit murder" -- is an imperative statement; the second statement, in either form, is a "valuational" statement. Little appears to believe that these two types of statements are identical and it is this belief that forces him to conclude that ethical statements "suggest" rather than "tell." In fact, the first statement, the imperative statement, does "tell" an individual how to behave; it is only the second statement, the valuational statement, which "suggests" how an individual should behave.

In fairness to Little, it should be noted that what he was attempting to elucidate was the general nature of a value judgment. Among his concluding remarks is the statement that:

> for our purposes, in this book, we do not require to have any criterion to distinguish value judgments which are ethical from those which are not. For that we would require a theory of ethics. It is sufficient, for our purposes, to be able to distinguish pure descriptions which are also value judgments and from pure value

judgments with no descriptive content.[9]

It is clear from this that Little believed it desirable to keep his discussion on a very elementary level. For the purposes of this study, however, the distinctions between an imperative statement and a valuational statement and between "telling" and "suggesting" is of some importance. The remainder of Little's discussion is concerned with "persuasive definitions" and specific value judgments in economics. At a later stage it will be necessary to direct attention towards "persuasive definitions"; now, however, we shall investigate Von Mises' discussion of the nature of value judgments.

Unlike Little's, Von Mises' discussion must be associated with a philosophical school. If the distinction between an objective approach and a subjective approach was to be made, Von Mises would have to be considered under the latter. Without hesitation, he states that: "Judgments of value are mental acts of the individual concerned,"[10] and elsewhere: "Value is not intrinsic. It is not in things and conditions in the valuing subject."[11]

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[9] Ibid., p. 68.

[10] Von Mises, op. cit., p. 19.

[11] Ibid., p. 23.

As shall be shown, he goes on to contend that their truth or falsity cannot be questioned.[12] From the viewpoint of many philosophers, this is highly contentious and immediately makes the discussion suspect. To the economist, the subjective approach, as opposed to the objective approach, has the definite advantage of delimiting the scope of his enquiry.

Many of the essentials of Von Mises' discussion are expressed in his opening paragraphs:

> Propositions asserting existence (affirmative existential propositions) or nonexistence (negative existential propositions) are descriptive. They assert something about the state of the whole universe or of parts of the universe. With regard to them, questions of truth and falsity are significant. They must not be confounded with judgments of value.
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> Judgments of value are voluntaristic. They express feelings, tastes, or preferences of the individual who utters them. With regard to them there cannot be any question of truth and falsity. They are ultimate and not subject to any proof or evidence.[13]

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[12] For a discussion of the objective and subjective approach to the problems which surround the selection of values, see W.B. Lamont, The Value Judgment (Edinburgh: The Edinburgh University Press, 1955), pp. 3-12.

[13] Von Mises, *op. cit.*, p. 19. In *Epistemological Problems in Economics*, trans. George Reisman (Princeton: D. Van Nostrand Company, Inc., 1960), Von Mises discusses the problems that we are concerned with here. His exposition of these matters is not consolidated nor is it as complete as that presented in *Theory and History*; for these reasons, the discussion in the *Epistemological Problems* will be neglected with the exception of a short section on "The Meaning of Neutrality with Regard to Value Judgments".

It is instructive to note that Gunnar Myrdal's approach is almost identical to Von Mises'. He writes: "People have ideas about how reality actually is, or was,

Von Mises has greatly narrowed the scope of the "value judgment." Unlike Little, he appears to deny that value judgments can be descriptive. All of Little's valuational statements, that is, those which "suggest", could be examined with respect to their truth or falsity by persons who agree on the imperative statements on which they are ultimately based.[14] While valuational statements

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and they have ideas about how it ought to be, or ought to have been. The former we call 'beliefs'. The latter we call 'valuations'. A person's beliefs, that is, his knowledge, can be objectively judged to be true or false and more or less complete. His valuation -- that a social situation or relation is, or was 'just', 'fair', 'right', desirable', or just the opposite, in some degree of intensity or other -- cannot be judged by such objective standards as science provides. In their 'opinions' people express both their beliefs and their valuations. Usually people do not distinguish between what they think they know and what they like or dislike." Quoted from Gunnar Myrdal, Value in Social Theory, ed. Paul Streeten (New York: Harper & Brothers, 1957), p. 71. Reprinted from Appendix I in An American Dilemma .

[14]Several philosophers contend that the "moral force" of a valuational statement arises from its association with an imperative statement that is left unexpressed and is implicit in the valuational statement. For arguments developed along these lines, see W.D. Lamont, op. cit., pp. 3-20.

Willis Moore, "The Language of Values", The Language of Value, ed. Ray Lepley (New York: Columbia University Press, 1957), has an excellent discussion on the relationship between imperative or "ought" statements and valuational or "hortative" statements. Pages 16-28 are especially relevant.

do express "feeling, tastes, or preferences of the individual who utters them," they can also be subject to proof or evidence once terminology is agreed upon. For example, both A and B may agree that the criterion for "goodness" is X. A may then assert that "Smith and Jones are good men"; having said this, it is still open to B to question the validity of the statement. Since a valuational statement is open to proof or evidence, Von Mises would deny that it is a value judgment.[15]

The second important characteristic of value judgments, and one which still further narrows the domain of the value judgment, is that they "dictate a certain course of action."

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[15] To avoid confusion, it should be noted that Von Mises draws a distinction between an individual's real value judgments and those which he conveys to others. He writes:

> "Judgments of value are mental acts of the individual concerned. As such they must be sharply distinguished from the sentences by means of which an individual tries to inform other people about the content of his judgments of value. A man may have some reason to lie about his valuations.
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> . . . .
>
> In declaring that with regard to a judgment of value there cannot be any question of truth or falsity, we refer to the judgment as such and not to the sentences communicating the content of such a judgment of value to other people."

Quoted from Von Mises, op. cit., p. 22.

Dewitt H. Parker, "Discussion of John Dewey's 'Some Questions About Value'" in Value: A Cooperative Inquiry, p. 235, makes much the same distinction on this point as Von Mises does. He writes: "It is most important, therefore, to distinguish between expressions of desires and values, and expressions about desires and values. Expressions about desires are propositions like any others, to be verified

This, of course, was the distinguishing characteristic of Little's imperative statements; however, Von Mises pushes the implications of this further. He writes:

> A judgment of value is purely academic if it does not impel the man who utters it to any action. There are judgments which must remain academic because it is beyond the power of the individual to embark upon any action directed by them . . . .
> The significance of value judgments consists precisely in the fact that they are the springs of human action. Guided by his valuations, man is intent upon substituting conditions that please him better for conditions which he deems less satisfactory.[16]

This is not unlike Little's moral force which suggests how an individual ought to or ought not to behave; however, it is certainly much more forcefully expressed and for this reason seems less nebulous.

As was intimated earlier, Von Mises approaches value judgments as being subjective. His open commitment

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or refuted . . . . Expressions of desires, taken as wholes, are not propositions at all (although they may contain propositional parts), but are volitional expressions; for their intention, by which their status is determined, is not to express anything true or false".

[16]Von Mises, op. cit., p. 20. It is interesting to contrast this with H.D. Aiken, "Reflections on Dewey's 'Questions About Value'", Value: A Cooperative Inquiry, ed. Ray Lepley (New York: Columbia University Press, 1949), p. 28, who states: "It is commonly held that value-judgments, in contradistinction to judgments of fact, are essentially 'expressions' of decisions. This view is held at the present time by most of the logical positivists. At the outset, let me say that there is no logical necessity that this be so".

to this school permits him to make observations which Little, who attempted to avoid association with any particular school, could not make. For Von Mises, it is the subjective nature of value judgments that makes it impossible to test their validity. He argues that an attempt to refute an ultimate value judgment is an indication that the principle concerned is no longer regarded as an ultimate value "but as a means to attain an ultimate value . . . ." Briefly, what he appears to be suggesting is that if it is possible to question a proposition of the form "one ought to be happy," the mere fact that you can question it presupposes that you have some higher value.

For the present purpose, the fourth significant observation made by Von Mises is that "Valuation invariably compares one thing or condition with another thing or condition."[17] In this he appears to suggest that a value judgment is a criterion for ordering different "conditions," or "states of the external world" whether "real" or "imagined." He comes to this conclusion from his initial premise that value judgments reflect an individual's tastes, feelings, and so forth. His contention is succinctly expressed in the statement that a value judgment "mani-

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[17] Ibid., p. 23. C.E. Ayers expresses substantially the same opinion in "The Value Economy", Value: A Cooperative Inquiry, p. 48.

fests a man's affective response to definite conditions of the universe as compared with other definite conditions."[18] It is perhaps expedient to note at this juncture that not all economists or philosophers would agree that all value judgments "compare." Lamont, for example, attempts to draw a clear distinction between "the simple positive value judgment" and the "comparative value judgment."[19] Conversely, however, Von Mises can claim support from nu-

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[18] Ibid., p. 23.

[19] Lamont's discussion on this issue is brief and not altogether satisfactory. He writes:

> "But if the simple positive value judgment ('X is good') expresses a demand or conative disposition to maintain something in existence, what is a 'comparative value judgment'? It is obvious that since the comparative value judgment expresses an estimate of degrees of goodness, all the things compared must be regarded as 'good' (in some degree). That is to say, there must be conative dispositions or demands to create or maintain them all. But under what circumstance should we place in an order of value two or more things, both or all of which we demand? Only in such circumstances as enforce a choice between them. The comparative value judgment is an expression of 'choice' when objective circumstances (which are for the moment beyond our control) enforce on us the disagreeable necessity of renouncing one thing if the other is to be attained.
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> . . . .
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> The comparative value judgment, therefore, is the expression of 'choice' (real or hypothetical) when circumstances (real or by hypothesis) enforce such a choice between two or more conceived ends, both or all of which the subject is disposed to adopt".

Quoted from Lamont, op. cit., pp. 18, 19.

merous philosophers.[20] From the economist's viewpoint, the idea of a value judgment as a criterion for ranking or ordering has much to recommend it; and in fact, it is as ordering criteria that value judgments are most often employed in welfare theory.

For many economists[21] and philosophers, the very act of asserting that something has value implies that it has value in relation to something else. The disputable point, and indeed there appears to be one if we may judge by the extended controversy among philosophers, is whether all value judgments are concerned with some form of evaluation. Again from the economist's viewpoint, the strongest argument, and the one which Von Mises presents, is that value judgments are concerned with a subjective evaluation, that is, they assert something about an individual's feelings, tastes, and preferences. Thus to say that "Welfare ought to be increased" or "An increase in welfare is a good thing" is, if this approach is accepted, tantamount to saying that a "condition or state of the external world" which provides greater welfare is preferable to a state or con-

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[20]See Willis Moore, "The Language of Values", and Ray Lepley, "A Second Sequel on Value", in The Language of Value, ed. Ray Lepley (New York: Columbia University Press, 1957).

[21]See C.E. Ayers, "The Value Economy", Value: A Cooperative Inquiry, p. 48.

dition in which less welfare is forthcoming.

Lamont's supposition that a simple positive value judgment exists is based on the contention that a comparative value judgment "expresses an estimate of a degree of goodness" and that to say that something is bad is not to say anything about its degree of goodness. Using Moore's illustration of the beautiful and ugly worlds, he attempts to clarify this point:

> Moore's illustration of the beautiful and ugly worlds is not a true instance of a 'comparative value judgment' unless he supposes that we attribute some degree of goodness to the ugly world, and would like both the beautiful and the ugly worlds if it were possible to have both. If he does not suppose this -- if he really supposes that we should say 'I want the beautiful world to exist and do not want the ugly world to exist' -- then he is really dealing with a simple positive value judgment: ' A beautiful world is or would be good; an ugly world is or would be not good or bad'. It is not here a question whether the former is 'better' than the latter. The question as to whether one is better only arises if we say they are both good.[22]

It seems from this that Lamont understands something other than what Von Mises does by "comparing" or "ordering" and by "the question as to whether one is better." Von Mises would probably answer Lamont's argument by suggesting that Lamont's illustration is academic unless it inspires the individual who uttered it to action. If the individual was moved to act and tried to create a more beautiful world

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[22]Lamont, op. cit., p. 18.

this would be taken as an indication that he preferred the beautiful world to the ugly world and this in turn would imply that he had compared them.

In fact, we do make comparisons between a thing or situation with one quality and a thing or situation which lacks that quality: individuals are able to choose and therefore they presumably are able to make some sort of comparison. Thus if an individual makes the value judgment that 'A beautiful world is good' and he is confronted with an ugly world which contains no goodness, that is void of goodness, it is still possible for him to say that a world which contains some goodness would be better. If he was confronted with two worlds, one beautiful and one ugly, he would be able to say that one is "better" and the question "whether the former is better" arises, although not both are good. If the original value judgment was, to use Lamont's example, "A beautiful world is or would be good; an ugly world is or would be not-good or bad" then no comparison need take place because the problem has been defined away, that is, it has been stated in such a form that we preclude the possibility of comparison, unless by comparison we mean the ascertainment of which world is good and which is bad. This would seem to be Lamont's argument.

Later in his discussion, Lamont states that:

> The comparative value judgment, therefore, is the expression of 'choice' (real or hypothetical) when circum-

stances (really or by hypothesis) enforce such a choice between two or more conceived ends, both or all of which the subject is disposed to adopt.[23]

If this is how a comparative value judgment is to be defined then we might suggest that the form of the statement is unimportant and that it is the use of the value judgment that determines whether the judgment is comparative or not. Using the example of the beautiful and ugly worlds again and the value judgment that "A beautiful world is good," it can be said that the statement, following Lamont, is both a simple positive value judgment and a comparative value judgment. It is a simple value judgment when the action "inspired" by it is a choice between a good and an ugly world. It is a comparative value judgment when the action inspired is a choice between two worlds both of which are beautiful in some degree. This, at best, is an awkward way in which to define a comparative value judgment; and from the economist's viewpoint, it seems an unnecessary refinement.

In all fairness to Lamont, it should be mentioned that he has been used as a straw-man. While he does insist that simple positive value judgments exist and examples of them can be found, he does not appear to believe that they are of particular significance to economic theory. In passing,

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[23] Ibid., p. 19.

he makes the reassuring statement that:

> . . . we found that the comparative form of the value judgment often provides a clearer test than does the simple positive form for distinguishing between the value judgment and other kinds of judgment . . . . We saw it is really the expression of choice when objective circumstances enforce a choice between alternatives both of which are thought good.[24]

Following E.T. Mitchell,[25] A.P. Brogan,[26] and Von Mises, we shall regard all value judgments as comparative value judgments. In short, we shall employ Mitchell's approach which he expresses, saying:

> As far as a hierarchy of definitions is concerned, the question is one to be settled by the norms applied in laying down the foundations of a deductive system. For this purpose, Brogan's choice of the relational term 'better than' has conspicuous advantages. The proposition 'A is good' is defined thus: 'The existence of A is better than the non-existence of A.'[27]

In adopting Von Mises' approach, Robbins' statement that "There are very fundamental epistemological questions involved here; and he would be a bold man who would regard

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[24] Ibid., p. 42.

[25] E.T. Mitchell, "Values, Valuing and Evaluation", Value: A Cooperative Inquiry, ed. Ray Lepley (New York: Columbia University Press, 1949).

[26] A.P. Brogan, "Urban's Axiological System", The Journal of Philosophy, XVIII (April, 1921), 197-209.

[27] Mitchell, op. cit., p. 191.

the problems of epistemology as settled"[28] has not been forgotten. Furthermore, by adopting a comparative theory of value we do not wish to make any pronouncement on its ultimate validity; its adoption has been based on expediency. Economists generally, are acquainted with the idea that value is relative and, moreover, that the implications of a value judgment as a criterion for ordering unanalysable preference is of greater use in welfare theory than is the notion of a simple positive value judgment.

While both Mitchell and Brogan have been cited for support in adopting a comparative theory of value, it should not be thought that their doctrines have been adopted in their entirety. There is one basic difference between their approach and Von Mises' which must be mentioned; depending upon how one is disposed to interpret their work, this difference may be regarded as a difference in emphasis. Von Mises' contention that:

> . . . the theorem of subjectivity of valuation means that there is no standard available which would enable us to reject any ultimate judgment of value as wrong, false, or erroneous in the way we can reject an existential proposition as manifestly false. It is vain to argue about ultimate judgments of value as we argue about the truth or falsity of an existential proposition.[29]

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[28]L.C. Robbins, "Live and Dead Issues in the Methodology of Economics", Economica, V (August, 1938), 348.

[29]Von Mises, op. cit., p. 22.

This has already been encountered; what is important to notice is that he does not deny that value judgments may be formulated because of "prevailing" conditions. In fact, the opposite is true. Later in his discussion he contends that individual value judgments in a common society are often similar because of a common environment and a common heritage. On the other hand, he regards it as highly significant that in almost every society there appear to be individuals who are unable to accept the prevailing value judgments:

> It cannot be denied by anybody that various individuals disagree widely with regard to their feelings, tastes, and preferences . . . .
>
> This does not mean that every individual draws his valuations from his own mind. The immense majority of people take their valuations from the social environment into which they were born, in which they grew up, that moulded their personality and educated them. Few men have the power to establish their own scale of what appears to be better and what appears to be worse.[30]

Both Mitchell and Brogan assume a similar approach but they push it much further. Mitchell suggests that valuing "is conditioned by organic and physiological processes far below the level of conscious choice" and that many objects (which) are values because they fulfill (these) organic and physiological needs. Ultimately, this approach leads him to declare that "consciousness and value emerge together";

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[30] *Ibid.*, p. 22.

but he rejects "the case of the amoralist, the subjectivist, or the logical positivist." In replying to criticism to his article, he states:

> Those theories which identify value with hedonic tome or some other subjective feeling fail to take account of the exceeding wealth of value terms in our language, most of them applying to the objects of nature and art.[31]

Thus, it seems clear that Mitchell and Von Mises would disagree on how we come to ascribe value to an object or condition; yet it seems equally certain that it would be a mistake to describe Mitchell as an objectivist. The divergence between Von Mises and Brogan would be equally as great, if not greater, on this point. Intrinsic value is of paramount concern in Brogan's view while Von Mises states flatly: "Value is not intrinsic."[32]

It is indeed unfortunate that philosophers have not been able to settle their differences on the fundamental question of how value comes to be ascribed to an object and hence what the epistemological status of a value judgment is. In view of these differences, the present impossibility of reconciling them and their importance to welfare theory, it would seem that most aspects of the

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[31] Mitchell, op. cit., p. 349.

[32] Von Mises, op. cit., p. 23.

discussion in the remainder of this study will be open to attack from some quarter. This would be true if our analysis required a highly refined understanding of the nature of a value judgment, but, in fact, it does not. Nevertheless, it would be foolhardy to suppose that all the lacuna of axiology can be avoided. Perhaps as economists we can take refuge in Osborne's statement that:

> The deplorable imbroglio in which the Philosophy of Value is entangled has been to no slight extent due to persistent confusion between problems of Philology and problems of Philosophy . . . . Current theories about value are concerned with different things and their only source of contact is the common use of one set of terms, to which they severally ascribe different meanings.[33]

In the preceding pages an attempt has been made to justify and support the approach, which for all purposes is Von Mises', which will be adopted; and at the same time to indicate the most vital areas where disagreement is likely to arise. As crude as some of Von Mises' concepts may seem, they are sharp enough to cut through issues that have confounded many economists.

It will be recalled that Von Mises' first exercise in discussing value judgments was to distinguish them from "propositions of existence" which assert something about the universe, and which, therefore, are descriptive. Phil-

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[33]H. Osborne, Foundations of the Philosophy of Value (Cambridge: Cambridge University Press, 1955), p. 1.

osophers are widely but not unanimously agreed that whatever value judgments are, they are not statements of "fact" and they are not simply and purely descriptive.[34] Little's views on this matter are particularly relevant, but they will be investigated in detail somewhat later.

Among the many philosophers who agree that a distinction can be drawn between judgments of value and judgments of fact there is considerable divergence of opinion over where the line of demarcation should be drawn. The line demarcating the two seems especially difficult to draw in theory but somewhat less difficult to find in practice. Thus even a vague theoretical distinction may become in practice a highly useful operational concept. Following the line of argument indicated by Little, Von Mises, Parker,[35] Myrdal, and perhaps most important of all, Kant,[36] we distinguish between problems of existence and problems of value. In the preceding pages an attempt has been made to elucidate the problem of value and to

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[34]For a brief summary of the general positions advocated by the opposing schools of thought on this issue, see Ray Lepley's opening paragraphs of "A Second Sequel on Value", _op_. _cit_., pp. 232ff.

[35]Parker, _op_. _cit_.

[36]For a brief formulation of Kant's contribution, see Osborne, _op_. _cit_., pp. i-xxii.

indicate what we understand by a value judgment. For the purposes of this study, we have exhausted our discussion of these matters; we are now interested in how a judgment of fact may be recognized.

As a first approximation, it may be said that a judgment of fact is a statement about existence or about the universe as it exists or as it is believed to exist, or, to broaden the concept and accept Aiken's argument,[37] as it may exist. It seems generally accepted by those who would define judgments of fact in this way, that these statements will always be descriptive. Much argument has centered around what may and what may not be regarded as descriptive. For the crude theoretical distinctions that this study will require, descriptive may be understood in the widest possible sense. This does not mean, however, that all statements that contain an element of description must be regarded as factual statements. Most forms of valuational statements are descriptive. Thus, the statement

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[37] Aiken, op. cit., especially p. 26. He writes:

"Regarding the question of existence, I contend that there is no reason why, in order that valuational propositions, as propositions, should be regarded as factual, they must be 'about' something already in existence. Only a small part of what are regarded as 'factual' propositions are judgments that something exists . . . . but, I believe, for example, that 'contrary to fact conditions', upon which so much discourse, scientific and otherwise depends, are properly spoken of as 'factual'. 'If I opened the window, the temperature in the room would fall' is, I believe, a statement of fact at the moment I write".

"Smith and Jones are good men," while it is a descriptive statement in some sense, it would in this study be regarded as a valuational statement. Our factual statements are similar to Von Mises' affirmative and negative existential propositions. Questions of truth and falsity are relevant to factual propositions and they can be verified or rejected. Furthermore, their truth or falsity is independent of a value judgment. It is in this that they differ from valuational statements. Valuational statements can only be made subsequent to postulating a value judgment for they state whether or not a thing or situation has met the conditions set forth by a value judgment. Without labouring over these general characteristics of judgments of fact, valuational statements and value judgments, it shall be assumed that in practice it will be possible to recognize each of them. For the economist and for the purposes of this study, this is all that appears to be required.

Equipped with these distinctions, it is possible to investigate an issue which has been of paramount importance in the controversy over the role of value judgments in economics. The issue -- interpersonal comparisons of utility -- has a long and significant history which must be studied in some detail if the development of the "New Welfare Economics" is to be understood. Since this chapter is in the nature of an introduction, its remaining pages will be devoted towards tracing the controversy over interpersonal comparisons of utility.

Part II

A thorough and detailed historical account of the status of interpersonal comparisons of utility would, at a minimum, have to begin prior to Bentham. The milieu in which Bentham pieced together utilitarianism was not of his own making and many of the vague, popular, and not-so-popular notions which were to become a part of utilitarianism were struggling towards more refined expression. Both Locke and Rousseau had greatly enhanced concepts of equality, or as the idea was cast during both the French and American revolutions, that "all men are born equal." But without belabouring this further, it need only be noted that the position and worth of the individual was elevated, that Hegelianism and nihilism were doomed in the western world. Had the fundamental trappings of any of these and many other philosophical systems remained prominent in western thought, interpersonal comparisons of utility, or for that matter, interpersonal comparisons of any type would have been meaningless. In many systems the individual is insignificant. What significance Hegel was prepared to allow the individual arose in considering him _vis-à-vis_ the state or the superman. In the content of some philosophies, then, disputes over interpersonal comparisons of utility would be as meaningful as medieval discourses on angels and pinheads. Yet in the most notable

discussions on the interpersonal comparisons of utility, this fact has been largely, if not totally, overlooked.

The substance of the disagreement over the nature of interpersonal comparisons of utility is first found in L.C. Robbins' The Nature and Significance of Economic Science published first in 1932. Following Robbins' presentation, Roy Harrod, in a 1938 presidential address before the British Association, attacked Robbins' position, and in turn, Robbins rallied to his own defense with an article in the same year in the Economic Journal. Each of these discussions will be examined in turn.

The concluding chapters of The Nature and Significance of Economic Science contains the essence of Robbins' views on interpersonal comparisons of utility. He believed at the time that his views were in some sense radical and that he was reacting against a consensus which he summarizes as follows:

> The Law of Diminishing Marginal Utility is held to provide a criterion of all forms of political and social activity affecting distribution. Anything conducive to inequality, condemned. These propositions have received the support of very high authority. They are the basis of much that is written on the Theory of Public Finance. It is safe to say that the great majority of English economists accept them as axiomatic.[38]

Robbins suggests that the argument which misleads the

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[38] Robbins, *op. cit.*, p. 120.

great majority of English economists is merely specious because it rests upon an extension of the Law of Diminishing Marginal Utility into a field in which it is "entirely illegitimate."

The fallacious argument begins, he says, with the Law of Diminishing Marginal Utility, which suggests that the "more one has of anything, the less one values additional units thereof." It is an easy step to conclude from this that the more income a man has, the less he will value additional units of income. Now comes the vital step. The "great majority" assumes that the marginal utility of a poor man's income is higher than the marginal utility of a rich man's income. It is here that Robbins rebels and parts company with his fellow economists. It is his belief that this assumption "begs the great metaphysical question of the scientific comparability of different individual experiences."[39] Proper use of the Law of Diminishing Marginal Utility will only permit one to say that for an "individual, goods can be arranged in order of their significance."

Before outlining Robbins' battle plan further, it is perhaps expedient to digress and find out what causes and what foes first drew him to the field. Doubtless, two

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[39]Ibid., p. 137.

personages stand out in the opposing vanguard and are, for present purposes, adequately representative of their fellows. The first of these is Marshall, armed with his blunt, but useful and highly-practical, Victorian weapons. Marshall writes:

> It has been already argued that desires cannot be measured directly, but only indirectly by the outward phenomenon to which they give rise: and that in those cases with which economics is chiefly concerned, the measure is found in the price which a person is willing to pay for the fulfillment or satisfaction of his desire.[40]

Thus, for Marshall, money provides an adequate measure of utility. In no way can it be doubted that Marshall believed that the Law of Diminishing Marginal Utility applied to money income, for he writes: ". . . the richer a man becomes, the less is the marginal utility of money to him . . . ."[41]

Here, of course, Marshall is applying the Law of Diminishing Marginal Utility in an intrapersonal sense, but when this is taken in conjunction with passages like the following, which are hardly rare in the Principles, there seems to be little doubt that Marshall sanctions the use of interpersonal comparisons of utility. He writes:

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[40] A. Marshall, Principles of Economics (8th ed.; London: MacMillan and Company, Ltd., 1959), p. 78.

[41] Ibid., p. 81.

> It is clear that if he (any individual) spends his income in such a way as to increase the demand for the services of the poor and to increase their incomes, he adds something more to total happiness than if he added an equal amount to the incomes of the rich, because the happiness which an additional shilling brings to the poor man is much greater than that it brings to a rich one.[42]

From these, and similar statements, Marshall's immediate successors appear to have drawn two conclusions. The first was that an indirect measure of utility -- money -- could be used to compare utilities between different individuals. And secondly, on the basis of the Law of Diminishing Marginal Utility, they assumed that total welfare could be increased by transferring money from the rich to the poor.

Standing along-side Marshall, but dressed in more refined battle attire, is Pigou. Perhaps it is more with Pigou than with Marshall that the responsibility for the perturbing baby of interpersonal comparisons of utility lies.

Pigou is much more bold in his statement of the reasonableness of interpersonal comparisons of utility. In fact, he appears to believe that interpersonal comparisons of utility are not only justified and fundamental to the development of welfare economics, but further, that they are

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[42] _Ibid_., p. 393.

fundamental to the whole of economics.

Among Pigou's earliest and most concise statements on interpersonal comparisons of utility are those which appeared in The Economics of Welfare, first published in 1920. After discussing the desirability of transferring wealth from the rich to the poor, he writes:

> The old 'law of diminishing marginal utility' thus leads securely to the proposition: Any cause which increases the absolute share of real income in the hands of the poor, provided that it does not lead to a contraction in the size of the national dividend from any point of view, will, in general, increase economic welfare.[43]

Pigou, however, is not prepared to give these concepts or principles universal applicability. At least one qualification should be noted. He writes:

> It must be conceded, of course, that if the rich and the poor of two different races with different mental constitutions such that the rich were inherently capable of securing a greater amount of economic satisfaction from any given income than the poor, the possibility of increasing welfare by this type of change would be seriously doubtful . . . . It may be maintained that a rich man, from the nature of his upbringing and training, is capable of obtaining considerably more satisfaction from a given income . . . than a poor man would be.[44]

Pigou's opinions remained unscathed by the controversies of the '30's which persuaded a great many economists

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[43]A.C. Pigou, The Economics of Welfare (4th ed.; London: MacMillan and Company, Ltd., 1960), p. 89.

[44]Ibid., p. 60.

that interpersonal comparisons of utility were "unscientific." In 1951 he reiterated many of the same ideas that he had done so much to foster thirty years before, but had in the intervening years lost their popularity:

> Now, if we take random groups of people of the same race and brought up in the same country, we find that in many features that are comparable by objective tests, they are on the average pretty much alike; and, indeed, for fundamental characters we need not limit ourselves to people of the same race and country. On this basis we are entitled, I submit, to infer by analogy that they are probably pretty much alike in other respects also . . . . On the basis of analogy, observation, and intercourse, interpersonal comparisons can, as I think, properly be made; and moreover, unless we have a special reason to believe the contrary, a given amount of stuff may be presumed to yield a similar amount of satisfaction, not as indeed as between _any_ one man and another, but as between representative members of groups of individuals, such as the citizens of Birmingham and citizens of Leeds.[45]

Here Pigou has introduced a modification, the concept of the representative man. How significant this modification may be is difficult, perhaps impossible, to assess. Clearly, it is indicative of a reservation on Pigou's part and it may be fairly assumed that it is in some sense a concession to the more adamant champions of "scientific economics." Whatever else the "representative member" may be, he seems to be the epitomy of Joan Robinson's "representative beast of representative hairiness." Pigou has indeed carried the

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[45]_Ibid_., p. 850.

interpersonal comparison of utility to an abstract plane and one wonders if on this plane it can still have relevance to policy matters. Pigou is seemingly arguing for interpersonal comparisons on the basis that we do not need to make comparisons "as between <u>any</u> one man and another." He would rather have us make comparisons "as between representative members of groups of individuals." Now presumably what members of various groups will have in common will be the value of their marginal utility of income, for this is what we are interested in. But to classify individuals into groups (and then select a representative member), we must make direct interpersonal comparisons between any one man and another. Theorists struggling for more refined analysis may be forgiven for giving this beast little thought and refusing to grapple with him.

Before leaving Pigou, a note should be appended to this discussion. Pigou was not overly concerned with "scientific economics." Being a student of Marshall, he was very much concerned with practical considerations. His writing fully suggests that he was aware of the theoretical weaknesses of interpersonal comparisons of utility. He firmly believed, however, that these weaknesses, that is, the "unscientific" elements of the comparisons, were the price which had to be paid if one hoped to avoid wrecking "not merely Welfare Economics, but the whole apparatus of prac-

tical thought."[46]

And thus the field on to which Robbins marched some twelve years later, was set. During those twelve years, there were no serious challenges to the position expounded by Pigou; as Robbins supposed, the position became widely and firmly held by economists. We may now return to see how our protagonist confronted the vicissitudes of the battle. He was left in the act of denying that there is any scientific justification for interpersonal comparisons of utility.

Robbins, however, was not all denials. He agreed with both Marshall and Pigou that an individual's preferences could be ordered on a scale according to their intensity and that it is possible to compare this ordering with the ordering of another individual's preferences. This, he suggests, is fundamental to the theory of exchange which he is prepared to accept. Nowhere in the theory of exchange is it necessary, he contends, to compare the satisfaction which the individuals engaged in the exchange realize as a result of their trading. The comparison of satisfaction is of an "entirely different nature" than the comparison of the ordered preferences. This belief rests on his assumption that: "There is no means of testing the magnitude of A's satisfaction as compared with B's."

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[46] Ibid.

Unlike Pigou, Robbins argues that the comparisons made in other fields, in every-day life, point out the dangers and inconsistencies of interpersonal comparisons of any type. In concluding his argument, he is diametrically opposed to Pigou:

> The Law of Diminishing Marginal Utility does not justify the inference that transferences from the rich to the poor will increase total satisfaction. It does not tell us that a graduated income tax is less injurious to the social dividend than a non-graduated poll tax. Indeed, all that part of the theory of Public Finance which deals with 'Social Utility' goes by the boards.[47]

While Robbins won much support for the case against interpersonal comparisons of utility, he also stimulated something of a counter-reaction. Although no one seemed to be prepared to advocate a return to the extreme positions of Marshall and Pigou, some ventured to suggest that Robbins himself had swung too far in the opposite direction and that his position was, in many respects, unsatisfactory. In 1938, in an address to the British Association, Roy Harrod stated the case for the restoration of a quasi-Pigouvian position or attitude.

Harrod argues that there are two objections to the use of interpersonal comparisons of utility. Both, he finds, have some validity but neither is conclusive enough to justify purging economics of all interpersonal comparisons

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[47] Robbins, op. cit., p. 125.

of utility. The first objection is embodied in the argument advanced by Robbins, namely, that in making interpersonal comparisons, the economist transcends the range of "scientific" economics. To this Harrod objects because he believes that economics is not "a mature and exact science," and, further, to expect economics to be a thoroughly scientific study may be to expect too much. He admits that a scientific comparison of individuals is impossible, but he argues that experience and common sense suggest that Pigou was not far from the mark in his approach. He asks if economists are in the enviable position where they can reject the very "clear findings of common sense." He replies to this rhetorical question, saying:

> No; some sort of postulate of equality has to be assumed. But it should be carefully framed and used with great caution always subject to the proviso 'unless the contrary can be shown.'[48]

The second objection is not an objection to interpersonal comparisons of utility *per se* but to redistribution schemes based on interpersonal comparisons; however, the consequences of this argument are largely irrelevant to the present discussion.

A few months after the publication of Harrod's address, Robbins, as mentioned earlier, rallied to his own defense

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[48]R. F. Harrod, "Scope and Method of Economics", *Economic Journal*, XLVII (September, 1938), p. 397.

with the publication of "Interpersonal Comparisons of Utility, A Comment." His avowed purpose was to present "a short account of the genesis" of his views. One cannot help wondering, however, if in the course of writing, the genesis was not worked out to completion. In a vital respect, Robbins' position appears to have changed.

In The Nature and Significance, he called upon the economist qua economist to shed all vestiges of non-scientific thought. This meant scouring the grime of interpersonal comparisons of utility from the economic barrel. In "Interpersonal Comparisons" he is still declamatory in insisting that interpersonal comparisons of utility are not scientific. Notwithstanding this, however, he is prepared to let the grime remain in the barrel provided that it was neatly covered by the label -- value judgment. The following sounds very unlike anything found in The Nature and Significance:

> Why should one be frightened, I asked, of taking a stand on judgments which are not scientific if they relate to matters outside the world of science? To recognize the claims of science in fields where scientific method was applicable was one thing; to attempt to claim scientific sanctions for judgments of questions not capable of scientific proof was another. That one was an obligation on rational man, the other, the stratagem of spiritual uncertainty. Was it not only the timidity of an age which had lost all confidence in ultimate values which led us to attempt to claim 'scientific' justification for attitudes which in the nature of things could not be justified (or refuted) by appeal to laboratory methods?[49]

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[49] L.C. Robbins, "Interpersonal Comparisons of Utility, A Comment", Economic Journal, XLVIII (December, 1938), p. 638.

And thus Robbins refurbished interpersonal comparisons and restored them to a place of some respect in economics. For many economists the status of interpersonal comparisons was dubious; for others, the timidity of which Robbins spoke so inhibited them that interpersonal comparisons could not be openly acknowledged; for still others, interpersonal comparisons merited no notice. Here the crusades both for and against the use of interpersonal comparisons of utility ended. Now that the dust has settled, it appears that the valiant banner of "scientific economics" has carried the day.

As indicated earlier, I.M.D. Little has appended some interesting observations to this discussion, although they do not seem to have had much influence on his fellow economists.

In his article,[50] Little integrates his discussion of interpersonal comparisons with a discussion of the concept of the "distribution of real income." He argues that any concept of the distribution of real income "obviously . . . implies the validity of interpersonal comparisons." Anyone who "denies" interpersonal comparisons will also have to regard the distribution of real income as a value concept; the "scientific" economist would then only be permitted to discuss the distribution of money income.

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[50]Little, "Foundations", op. cit., p. 241.

Little suggests that this is precisely the position Lerner advocates. Lerner, he says, is prepared to accept an equiprobability that out of a large number of economic changes the shift in the distribution of income will, in fifty per cent of the cases, increase welfare, and in fifty per cent of the cases, will decrease welfare, and that "on the assumption of diminishing marginal utility of money to each individual, each loss would be larger than each gain, and, therefore, total satisfaction would probably decrease."[51] This is a conclusion which Little is unprepared to accept. He concludes his discussion on this point, saying:

> We can conclude that any argument which 'denies' interpersonal comparisons and, at the same time, asserts that an equalitarian division of money income would probably increase satisfaction, must be wrong.[52]

From here, Little goes on to demonstrate that it is practically impossible to make a meaningful correlation between money income and individual welfare. It is, he assumes, real income which must be used in talking about individual welfare or changes in individual welfare. He further believes, however, that the "heterogeneous collection of goods which different people buy may offer no basis

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[51] Ibid., p. 246.

[52] Ibid., p. 241.

for comparison." From this he deduces that considerations of the distribution of real income involve "comparing different peoples' states of minds or changes in them." Because he believes that no judgments about welfare can be made without considering the distribution of real income, he also appears to believe that some sort of interpersonal comparison is vital to the development of welfare economics. This leads him to question in what sense other economists deny interpersonal comparisons.

For Little, to "deny" interpersonal comparisons makes little sense. To deny interpersonal comparisons, he argues, is ultimately to deny the existence of other minds. His argument rests on two assumptions: first, that the denial of interpersonal comparisons assumes that "other minds are not analysable in behaviouristic terms," and secondly, that "behaviour is not evidence in favour of other minds."

Implicitly, Little supposes that few economists would be prepared to deny the existence of other minds, and that, in fact, they probably do believe that behaviour is evidence for the existence of other minds. There is another possible argument on which one could claim to know of the existence of other minds, but is hardly one that the "scientific" economist would want to appeal to. This is to claim that by "some kind of metaphysical intuition, it is

possible to know of the existence of other minds but not to know anything about them."[53] If something is known about them, then it becomes possible to compare them. It is inconceivable that the existence of something can be known, but that nothing can be known about it. Nevertheless, even the propagators of this view must admit that people do, in fact, make interpersonal comparisons. The truth or falsity of these statements or comparisons is not, Little would argue, a matter concerning a value judgment, it is a matter concerning the judgment of facts. The line of argument which insists that such a judgment is a value judgment must, if it is to be consistent, regard interpersonal comparisons of anger, sympathy, kindness, intelligence, and so forth as value judgments. This conclusion Little finds unacceptable and he concludes that "interpersonal comparisons are not value judgments." On the basis of our distinction between a value judgment and a judgment of fact, we must wholly concur with his conclusion and advance the proposition that interpersonal comparisons of utility are judgments of fact. Little concedes to Robbins that interpersonal comparisons are not scientific, but unlike Robbins, he does not believe that this is sufficient reason for "denying" them. The denial of interpersonal comparisons, he says, "makes com-

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[53] Ibid., p. 242.

plete nonsense of all factual and all general value judgments about income distribution and consequently makes nonsense of the whole of welfare economics and much else besides."[54] In summarizing this phase of the discussion, he writes:

> The bogey of 'interpersonal comparisons' has surely tortured economic theory for long enough; Professor Robbins was right in thinking that welfare economics involved ethics, but wrong in thinking that ethics crept in via interpersonal comparisons. The ethics is there because the welfare terminology is an ethical terminology.
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> . . . our discussion is not meant to imply that the new welfare economics or any other welfare ecomonics is completely rubbish. It only becomes absurd if it is pushed too hard in an attempt to precisify what cannot be precise and if perfect scientific objectivity is claimed.[55]

This concludes the present discussion of interpersonal comparisons of utility. It should be abundantly clear that interpersonal comparisons do not have a secure niche in "respectable" economic thought. Any attempt to employ them is bound to be controversial and to provoke strong objections from some quarters. During the late '30's, some economists advanced proposals which they hoped would avoid the necessity of making interpersonal comparisons. Accompanying this hope was a desire to mitigate or, if

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[54] Ibid., p. 243.

[55] Ibid., p. 244.

possible, to erase the influence of ethical judgments in welfare economics. An investigation of these proposals brings us to the second chapter of this study.

CHAPTER II

THE COMPENSATION PRINCIPLE: AN ATTEMPT TO CONSTRUCT A VALUE-FREE WELFARE ECONOMICS

From the despair which arose from the discussions on interpersonal comparisons of utility was born the compensation principle. Some who witnessed its inception hailed it as a major breakthrough; unfortunately, senility quickly descended upon it.

The purpose of this chapter is to trace the fortunes of the compensation principle, to discover why it was hailed as a breakthrough, why senility descended upon it, and, as a final exercise, what may be salvaged and used to analyse policy recommendations.

The fledging compensation principle was sired by Harold Hotelling as early as 1938. In the classic article, "The General Welfare in Relation to Problems of Taxation and of Railway and Utility Rates," Hotelling wrote:

> A less conservative criterion than that of a sufficient revenue for total costs is that if some distribution of the burden is possible such that everyone concerned is better off than without the new investment, then there is a *prima facie* case for making the investment. This leaves aside the question whether such a distribution is practicable. It may often be good social policy to undertake new enterprises even though some persons are put in a worse position than before, provided that the benefits to others are sufficiently great and wide-spread.
> . . . .
> Where losses involve serious hardship to individuals, there must be compensation, the law of averages may be

> trusted to equalize the benefits to some extent, but never completely. It will always be necessary to provide for those individuals upon whom progress inflicts special hardship . . . .[1]

It is possible to find passages in earlier works, particularly Pigou, which imply or suggest that compensation is a suitable method of redressing the special hardships inflicted by progress. None, however, seems to have held the idea as firmly as did Hotelling; to a large extent, however, he suffered the same fate as did his predecessors, for his name is seldom associated with the compensation principle.

It seems clear that what Hotelling had in mind was that, if as the result of a change, income distribution was affected, those who gained by the redistributions should compensate or be able to compensate those who lost as a result of the redistribution. What Hotelling failed to do was to make this a principle by which the desirability of a change could be determined. That is, he failed to turn it around and say that if as a result of a change the gainers would be able to compensate the losers, then on the assumption that it is desirable to increase welfare, the change should be undertaken. This was left to Kaldor.

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[1]Harold Hotelling, "The General Welfare in Relation to Problems of Taxation and Railway and Utility Rates", Econometrica, VI (July, 1938), p. 267.

Kaldor's short note, "Welfare Propositions and Interpersonal Comparisons of Utility,"[2] appeared in the Economic Journal of 1939. In this article, Kaldor endorsed Robbins' view of the nature of interpersonal comparisons of utility, but he did not believe that the rejection of interpersonal comparisons precluded the possibility of the economist making objective policy pronouncements. In fact, he believed quite the contrary.

His argument is couched in the classic debate over the justification of the repeal of the Corn Laws, the example which both Robbins and Harrod used. Of course, all three meant the conclusion that they drew from this example to have general applicability. Apparently, Kaldor believed that both Robbins and Harrod thought that an argument for the repeal of the Corn Laws must presuppose some sort of interpersonal comparison of utility. This is a faultless assumption, for both did. Kaldor, however, argues that the case for or against the repeal of the Corn Laws can be presented without any allusion to interpersonal comparisons. He writes:

> It is only as a result of this consequential change in the distribution of income that there can be any loss of satisfaction to individuals, and hence the need to compare the gains of some with the losses of others. But it

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[2] N. Kaldor, "Welfare Propositions in Economics", Economic Journal, XLIX (September, 1939), 549-52.

> is always possible for the Government to ensure that the previous income-distribution should be maintained intact: by compensating the 'landlord' for any loss of income and providing the funds for such compensation by an extra tax on those whose incomes have been augmented. In this way everybody is left as well off as before in his capacity as an income recipient; while everybody is better off than before in his capacity as a consumer.[3]

Kaldor goes on to point out that the type of change he is contemplating results in an increase in physical productivity and hence in an increase in aggregate real income. This being the case, it is possible that everyone could be made better off. It has already been demonstrated that it is very nearly meaningless to talk about increases and decreases in real income without associating them with the mental states of individuals. However, to put things in their proper perspective, it should be recalled that Little's article, in which this premise was stated, was not written until some ten years later. Neglecting these considerations, Kaldor suggests that "whether the landlords in the free-trade case should in fact be given compensation or not is a political question on which the economist *qua* economist could hardly pronounce an opinion." He admits that a value judgment on the distribution of income must be made. Here, then, is the essence of Kaldor's proposal: if those who stand to gain as a result of an economic change

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[3] *Ibid*., p. 551.

are hypothetically capable of compensating the potential losers, then the change should, insofar as the economist is concerned, be undertaken. Having laid the egg that hatched into a well-feathered controversy, Kaldor withdrew to other parts of the economists' roost.

A few months later, "The Foundations of Welfare Economics"[4] by J.R. Hicks appeared in the Economic Journal. In this article, Hicks endorsed Kaldor's use of the compensation principle, and although his name is often associated with it, he, in fact, did not substantially elaborate upon it or modify it.

Hicks did, however, put the principle in a more meaningful perspective, that is, he gave it a more formal context which clarified its applicability and use. He began by defining an optimum organization for a society. He wrote:

> Let us then define an optimum organization of the economic system as one in which every individual is as well off as he can be made, subject to the condition that no reorganization permitted shall make any individual worse off. This is not an unambiguous definition of an optimum organization; it does not enable us to say that with given resources and given scales of preference there will be one optimum position and only one.[5]

Thus starting from some sub-optimal position there will

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[4] J.R. Hicks, "The Foundations of Welfare Economics", Economic Journal (December, 1939), pp. 696-712.

[5] Ibid., p. 699.

be, not one, but a number of optimal positions to which it is possible to move. These possible optima Hicks writes, "are distinguished from one another by differences in the distribution of social wealth." It should be noted that Hicks attempted to define the optimum in terms of efficiency of output and further he attempted to disregard changes in distribution, subject to the provision that no one is made worse off. On this issue Mishan writes of Hicks:

> Hicks . . . eagerly grasped this notion of examining the efficiency of alternative economic organizations without reference to the question of distribution, and particularly, without reference to the comparison of satisfaction as between individuals.[6]

Notwithstanding this however, Hicks does unwittingly bring distributional considerations in through the back door and with them comes the compensation principle. On the one hand, Hicks is not prepared to sanction a change if it makes someone worse off; on the other hand, he clearly recognizes that almost all economic changes in a system of private enterprise are reflected in the price system. Changes in price will, he suggests, benefit some and harm others. These considerations would appear to make his criterion for a change to an optimal position inoperative;

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[6] E.J. Mishan, "Survey of Welfare Economics", Economic Journal (June, 1960), p. 119.

the contrary is true, however, for it is at this point that the compensation principle is introduced:

> Nevertheless, this does not prevent us from applying our criteria to the case of private enterprise, because we can always suppose that special measures are taken through the public revenue to compensate those people who are damaged.[7]

This is the essence of Kaldor's proposal, and in Hicks' hands it remains much the same; there is probably little to be gained by trying to distinguish between the two. To differentiate between changes made within the sanction of the compensation principle, that is, those changes which should be undertaken but which do not fulfill the more rigid requirements of the Paretian criterion and changes in which it would be impossible to compensate the losers, Hicks assigns a special name to the former -- "permitted reorganization." For clarity it should perhaps be added that the permitted reorganization will include all changes which do satisfy the Paretian criterion, for here, of course, there are no losers. Now an optimal position can be defined as a position from which it is impossible to make a permitted reorganization.

Since Hicks, like Kaldor, only requires that the gainers are hypothetically capable of compensating the losers, and since he defines an optimal position in terms

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[7] Hicks, "The Foundations of Welfare Economics", p. 709.

of "permitted reorganization," it is not clear in what sense he can be said to disregard distributional effects. Perhaps it is because he is unprepared to define optimum conditions in terms of the distribution of real income that he is thought to disregard distributional considerations. Implicitly, he suggests that a discussion of the optimum conditions in terms of distribution must involve an untenable value judgment:

> I do not contend that there is any ground for saying that compensation ought always to be given; whether or not compensation should be given in any particular case is a question of distribution, upon which there cannot be identity of interest, and so there cannot be any generally acceptable principle.[8]

For the present purpose this completes the discussion of Hicks' treatment of the compensation principle. Before leaving it, it should be noted that neither Hicks nor Kaldor employed utility possibility curves in their discussion although the textbook presentations usually enunciate their ideas through the use of utility possibility curves. The geometric exposition of the compensation principle and its allied concepts is an innovation of the critics and popularizers. The first and perhaps most important of the critics was Scitovsky.

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[8] Ibid., p. 711.

Scitovsky's criticism, which was shortly embraced by all economists, was contained in "A Note on Welfare Propositions in Economics," which appeared in the Review of Economic Studies[9] for 1941. Strictly speaking, much of this article could be considered extraneous for the present purposes, but if parts of it are omitted, the concomitant danger of misrepresentation must be faced. Because of this and because textbook presentations of Scitovsky's criticism are usually formulated with reference to utility possibility curves which Scitovsky did not use, his article will be reviewed in greater detail than would otherwise be necessary.

Scitovsky begins by distinguishing two types of welfare propositions: the first type is based on an assumption of a fixed quantity of employed resources; the second type regards the quantity of resources as a variable. He suggests that all the welfare propositions of the classical economists can be demonstrated on the assumption of a fixed quantity of resources. His discussion of the optimal allocation, optimal in the sense that it is most "efficient", is rather summary: "for the formal proof of the geometrical arguments and their generalizations, the reader is referred to the original sources and to textbooks dealing with the

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[9] T. Scitovsky, "A Note on Welfare Propositions in Economics", Review of Economic Studies, IX (November, 1941), 77-88.

subject."[10]

From here Scitovsky goes on to postulate that economic welfare propositions can seldom be made without the use of interpersonal comparisons of utility.[11] Not wanting to see the economist hamstrung by interpersonal comparisons, he suggests:

> Favouring an improvement in the organization of production and exchange only when it is accompanied by a corrective redistribution of income fully compensating those prejudiced by it may seem to be one way out of the difficulty, because such a change would make some people better off without making anyone worse off. For instance, it might be agreed that the abolition of the Corn Laws should not have been advocated by economists in their capacity of pure economists without advocating at the same time the full compensation of the landowners out of taxes levied on those favoured by the cheapening of corn. Yet, in a sense, and regarded from a long-run point-of-view, such propositions are not independent of value judgments between alternative distributions of income either. For, going out of their way to preserve the existing distribution of income, they imply a preference for the 'status quo'.[12]

Scitovsky's last point, namely that acceptance of the status quo implies a preference for it and is consequently a value judgment, deserves further comment. Had he pushed his reasoning further, he could lay claim to being the first

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[10] Ibid., p. 78.

[11] Scitovsky does not make clear whether he regards interpersonal comparisons as value judgments or difficult factual judgments. He simply describes them as impossible.

[12] Scitovsky, op. cit., p. 79.

to recognize that the compensation principle is underpinned by value judgments. However he chose to reprimand his predecessors for what he considers an unwarranted conservative bias.

If Scitovsky was justified in accusing Kaldor and Hicks of preferring the status quo by accepting it, then he is justified in accusing them of making a value judgment. We have seen that there is no unambiguous sense in which it can be said that Hicks avoided the problem of distribution. It clearly enters into his analysis. Scitovsky misrepresents them however by suggesting that their value judgment was: "It is a good thing to maintain the status quo." In fact, this is not the value judgment they made. Rather they wished to leave the question of the "proper" distribution to some other authority. Their value judgment is more of the nature: "It is a good thing to let the political authority determine the 'proper' distribution of income." Kaldor went part way towards expressing this when he admitted that the question of whether or not compensation should be paid required a value judgment.

For the economist, Scitovsky suggests, there are two ways to circumvent interpersonal comparisons. The first is to admit the impossibility of making "scientific" interpersonal comparisons of utility, use value judgments as the criteria for efficiency, and disregard the distribution of

income. (He suggests that he can disregard them because one will be considered as good as another.) Scitovsky believes that this approach is open to the objection that the value judgments are still dependent on interpersonal comparisons because they depend on the assumption of their "impossibility."

The second approach, and the one Scitovsky is prepared to support, requires that the economist advance his welfare propositions as the criteria for efficiency and at the same time stress the inadequacies and limitations of these criteria. He goes on to say:

> He may then point out the nature of eventual redistribution of income likely to accompany a given change and stress the necessity of basing economic policy on considerations both of economic efficiency and social justice. Such an attitude, which I think is the only correct one, may diminish the force of the economist's welfare propositions but does not make them less useful.[13]

Using this second approach, he then turns to consider the problem of welfare propositions in the wider sense. It will be recalled that welfare propositions in the wider sense are meant to cope with not only redistribution of income and alterations in production and exchange, but also with changes in the total quantity of employable resources and the degree in which they are utilized.

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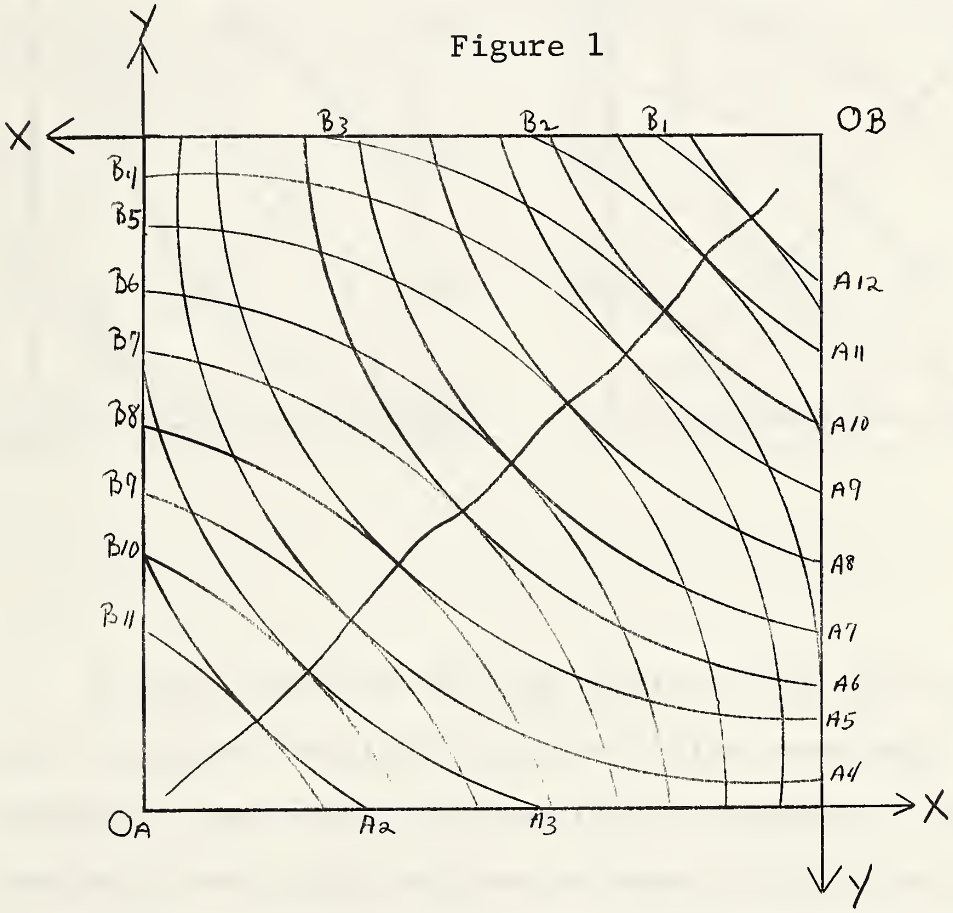
[13] *Ibid.*, p. 80.

Having crossed the plains, it is perhaps expedient to pause and sharpen our knives before we enter the jungle. The type of welfare adjustments which Scitovsky has in mind when he speaks of welfare propositions in the narrower sense can be shown with the use of a single diagram of the following type. It is a familiar tool and should need no explanation.

Figure 1

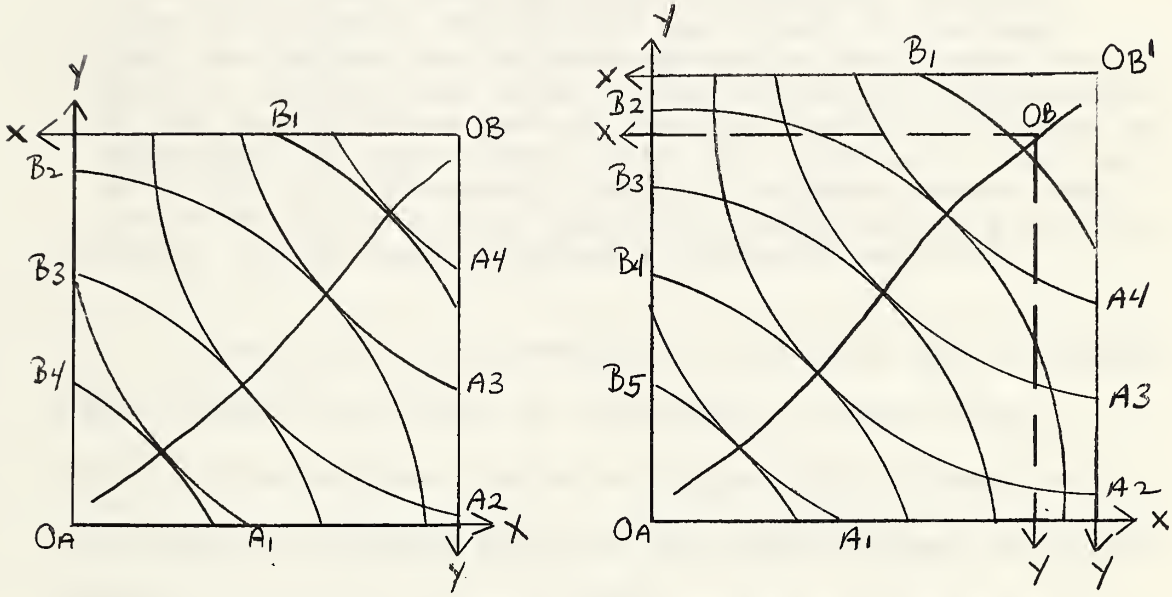


However, to demonstrate the concept of welfare propositions in a wider sense, a single diagram is no longer sufficient because as Scitovsky points out:

> . . . the quantities of resources available for consumption are changed, hence the relative position of the in-

difference maps is altered, hence it follows that welfare propositions in the wider sense must involve the comparison of two diagrams.[14]

Figure 2



It will be noted that the shift in the whole pencil of B's map has resulted in curves which previously did not intersect, now being in a position of tangency. Thus the contract curve which may now be drawn through the points of tangency is, in our diagram, superior to the contract curve in the first figure. When the shift is such that B's

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[14] Ibid., p. 82.

map shifts to the north and to the east or to the north and not to the west, or to the east but not to the south, the resulting contract curve will always be superior. Scitovsky notes that:

> From the fact that the second diagram's contract curve is superior to that of the first, it follows that the latter can be represented on the second diagram by tracing the locus of the points of intersection of all indifference curves that in the first diagram are tangential to each other. This will give us a curve on each side of the second diagram's contract curve, and the areas between them represent positions that are superior to the first diagram's contract curve.[15]

From this it is possible to conclude that a change which permits the group or individual to move from a point on the contract curve of Figure 2(A) to the contract curve of Figure 2(B), or the area between the "old" contract curves of Figure 2(B), "can be said to be desirable with the same generality and significance with which perfect competition or direct taxation are said to be desirable on the grounds of their allocative efficiency."[16] Scitovsky points out that in fact the change may not and need not improve every individual's welfare. It would be possible, however, after the change was undertaken, to redistribute income so that

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[15] Ibid., p. 83.

[16] Ibid.

each individual could be made better off. Like both Hicks and Kaldor, Scitovsky only requires that the gainers must be hypothetically capable of compensating the losers.

The validity of this argument rests on three assumptions: first, that getting more commodities without foregoing others is in some sense, a good thing; secondly, that the resulting redistribution is not too retrogressive from the viewpoint of social justice; and, thirdly, that the "increase in plenty does not lead to a serious deterioration of the allocative efficiency of the economic system." Fortunately, there is a test which determines whether this last assumption has been fulfilled:

> To test whether a diminuation in allocative efficiency has not obviated the advantages of increased plenty, we must see if after the change, it is possible fully to compensate people prejudiced by it out of funds levied on those favoured by the change, without thereby completely eliminating later gains. From the geometrical argument above, it follows that if this test is fulfilled for one initial distribution, it will be fulfilled for all possible income distributions and vice versa.[17]

The type of change which has been contemplated thus far resulted in, or was reflected in, a very restricted type of shift in B's indifference map such that there was an increase in one or both commodities. It is possible, however, that the quantity of some goods or resources may be

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[17] <u>Ibid</u>.

increased while the quantities of others is decreased. Under these circumstances, it is no longer possible to say that all positions on the contract curve which results subsequent to the change are superior to the position on the contract curve which existed prior to the change. On this issue Scitovsky writes:

> Nothing general can be said about the relationship of the two curves in this case without detailed knowledge of the shape of the indifference maps.[18]

Thus we are faced with two contract curves, each of which may be superior in parts to the other, inferior throughout its entirety to the other, or superior throughout its entirety to the other. This would appear to foreclose on all possibilities of making welfare recommendations. This, however, is not the case, and it is precisely on this point that Scitovsky makes a significant and positive contribution to the development of the compensation principle. He writes:

> We propose, therefore, to make welfare propositions on the following principle. We must first see whether it is possible in the new situation so to redistribute incomes as to make everybody better off than he was in the initial situation; secondly, we must see whether starting from the initial situation it is not possible by mere redistribution of income to reach a position superior to the new situation again from everybody's point-of-view. If

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[18] *Ibid.*, p. 84.

> the first is possible and the second impossible, we shall say that the new situation is better than the old was; whereas, if both are possible or both are impossible, we shall refrain from making a welfare proposition.[19]

This is the essence of Scitovsky's "double criterion." While he realized that he had greatly narrowed the applicability of the compensation principle, he also believed that he had restored it to a less equivocable position in economic theory. More bluntly, he felt that there were cases where a hypothetical payment of compensation surmounted the problems of interpersonal comparisons of utility and offered a trustworthy and value-free guide for policy.

Little,[20] writing in 1949, found much with which to be dissatisfied. While he considered the Scitovsky double criterion as an improvement over the Hicks-Kaldor criterion, he still regarded it deficient in several respects, and, consequently, he hoped to eliminate these deficiencies by making the criterion still more rigid and demanding. His modifications and proposals are enunciated in "The Foundations of Welfare Economics" which is the same article in which he attempted to clarify the nature of interpersonal comparisons of utility. It will be recalled that Little was more precise than his contemporaries in defining value

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[19] Ibid., p. 86.

[20] I.M.D. Little, "The Foundations of Welfare Economics", Oxford Economic Papers, I (June, 1949), 227-46. Hereafter referred to as "Foundations".

judgments and further that he displayed greater perceptiveness when confronted with hidden value judgments.

It is hardly surprising, then, that much of his criticism was directed towards the claims that the compensation principle was innocent of the crimes committed by interpersonal comparisons of utility and that it was not a propagator of the economists' clandestine value judgments. To reiterate all of his arguments here would be an unrewarding redundance; however, a few which are particularly relevant in the present context should not pass without note.

Little argues that the acceptance of a hypothetical compensation principle carries with it implicit acceptance of interpersonal comparisons of utility, and further, that money has the same utility for everyone. Should the reader attempt to repudiate these suggestions, Little suggests that he must "abandon the view that 'happiness of the group' is a name for a collection of individual satisfactions." Since the new welfare economics was reported to have overcome the necessity of making interpersonal comparisons of utility, Little assumes that the second possibility is the one which the new welfare economists would parade before their fellows. This leads Little to weave a discussion that abounds with paradoxical threads but which in his hands are resolved into a well-conceived pattern. His loom comes to rest when he arrives at a familiar con-

clusion, namely that:

> Any definitions which one proposes for a phase of this kind conceals an ethical judgment . . . it follows from the nature and usage of welfare language that welfare judgments are, partly at least, value judgments.[21]

He appears to modify his position somewhat in the ensuing discussion by saying that any definition of an increase in welfare is, as he calls it, a "persuasive definition."

Little's second criticism is perhaps more telling. He criticises Hicks for attempting to neglect and isolate the distributional effects of an economic change. It will be recalled that Hicks believed Kaldor had found a method of circumventing distributional judgments and that it was for this reason that he so wholeheartedly embraced Kaldor's proposal. Little, however, implies that Hicks and Kaldor made an unwarranted "factual" assumption and, if this is not enough to cast suspicion on their conclusions, an unwarranted value judgment. Their unjustified factual assumption was that the distributional effects would usually be small; the villainous value judgment, which follows from this, was that since the distributional effects are small, they can be neglected.

It is not clear what support Little has for these

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[21] Ibid., p. 229.

criticisms, for while it is true that both Hicks and Kaldor hoped to be able to avoid making value judgments on the distribution of income, they did not base their hopes on the belief that the distributional effects would necessarily be small. At one juncture, Hicks suggests that if a series of changes are proposed, the distributional effects may cancel each other. However, Little's suggestion that Hicks "in effect" argued along these lines may be to stretch the meaning of "in effect" beyond its customary meaning.

Without going further astray, it is perhaps sufficient to record that the essence of Little's contention is that no pronouncements on welfare proposals can be made without explicit consideration of the distributional effects of the proposals. He writes:

> We propose that every welfare conclusion must be premised by a judgment to the effect that the change in question will at least not lead to an unfavourable distribution of income.[22]

Little intends that a value judgment on the most desirable distribution of income should be used in conjunction with the Hicks-Kaldor criterion. Again for reasons which are not apparent, he suggests that this criterion, the favourable distribution, is the "more important" of the two.

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[22]Ibid., p. 234.

In giving priority to one of these criteria, Little himself appears to have succumbed to making a value judgment.

With the use of the Hicks-Kaldor criterion à la Little, three different types of change are distinguished. First are those proposals which would lead to an unfavourable distribution of income; whether the Hicks-Kaldor criterion would be fulfilled in such a case is immaterial because the proposal would be disregarded on the basis of the unfavourable distribution of income.

The second type of proposal would lead to distributional effects which are small or "would not be unfavourable" and, in addition, the proposal would satisfy the Hicks-Kaldor criterion. Proposals in this category may be said to increase welfare if they are undertaken.

The remaining type of proposal is not unlike the second, but, Little warns, it is more complicated. This class comprises those changes which would have a "considerable but favourable effect on income." If the change could also satisfy the Hicks-Kaldor criterion, it would increase welfare. This, strangely, does not imply that the change should in fact be undertaken because "it might conceivably be possible to increase welfare more by carrying out the real income distribution which the change would cause in a 'natural' manner and without making the change." The resolution of this seemingly paradoxical suggestion

leads Little to explore the Scitovsky "double criterion." He comes to the conclusion that Scitovsky's amendment of the Hicks-Kaldor criterion is "formally speaking, an improvement." Typically, however, he denies that it is sufficient of a criterion for judging the welfare effects of an economic change. It is useful, nonetheless, in determining whether a favourable redistribution of income would be possible by the redistribution of money in a "neutral manner," or whether it would actually be necessary to make the change.

Returning now to the third classification of the proposals, that is, those changes which satisfy the Hicks-Kaldor criterion and lead to a considerable but favourable redistribution of income, Little contends that if the Scitovsky criterion is not fulfilled it would be wiser not to make the change, and instead, simply to redistribute income. He goes on to say that:

> If . . . the Scitovsky criterion were satisfied, it would not matter whether the Kaldor-Hicks criterion were satisfied or not. Redistributing money alone would increase welfare, and if we actually did this, and if the Scitovsky criterion then proved to have been satisfied, it would follow that we could further increase welfare by making the change and compensating . . . . It follows that changes of this third class ought to be made if income redistribution is favourable, and if the Scitovsky criterion is satisfied.[23]

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[23] *Ibid.*, p. 236.

The reader may wonder what the significance of this three-fold classification of proposals is. Perhaps Little wondered also, for he omitted this break-down in his latter work, and, as a result, it appears to be less pedantic and more gratifying. This classification does have the advantage, however, of clarifying the issues which may be involved in any proposal.

In summarizing his argument, Little points out that its underpinnings consist of three value judgments. The first two, which he calls "general value premises" are, he suggests, either implicitly or explicitly assumed by all proponents of the compensation principle. Indeed, they have been assumed as axiomatic by virtually all western welfare economists. The first of these is that an individual is better off if he is in a chosen position. This, of course, is recognition of the doctrine of consumer sovereignty; any other assumption in the place of this would likely be incompatible with western ideals. While it is likely that this assumption would cause a minimum of debate in practically any circle, the second could easily be construed into a sanction for inequalities, and for this reason might be accepted only with hesitation. Among economists, however, it has failed to sustain debate. It is that: "It is a good thing that one individual should be better off if none are worse off."[24]

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[24]The implications of these value judgments are discussed later in this chapter.

The remaining "value judgment" is not one which was made by earlier champions of the compensation principle; in fact, it was the very one which they hoped to avoid. It is that for every change a "judgment as to whether the resultant redistribution of real income would be a good thing or not." It is in the demonstration of the necessity of this assumption that Little made his major contribution to the development of the compensation principle.

The principles which were set forth in the "Foundation of Welfare Economics" were retained and elaborated upon in the <u>Critique of Welfare Economics</u>. The more elaborate and detailed discussion in the <u>Critique</u> permitted Little to reach several interesting conclusions which were omitted in the 1949 article.

He clarified what is meant by a "good" redistribution of income:

> If we say that a move from Q_1 to Q_2 would be a good redistribution, what exactly do we mean? We mean that any purely distributional change (by which is meant direct transfer from one individual to the other of sums of money or sets of goods) which would produce a point which is distributionally indifferent to Q_2 would be a good thing.[25]

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[25] Little, <u>A Critique of Welfare Economics</u> (2nd ed.; London: Oxford University Press, 1957). Hereafter referred to as "Critique".

As before, he is adamant in insisting that a value judgment on the distribution of income must be made.

Among these things which make the discussion in the <u>Critique</u> more satisfying was the introduction of utility possibility curves. Unlike many authors who have used them blithely and without hesitation, Little pauses to explore their possible meanings. Since practically all recent discussions of the compensation principle have made extensive use of the utility possibility curves, it may be expedient to record Little's observations on their possible meanings. He distinguishes four instances where the utility possibility curve can have quite distinct meaning. The first case obtains when the commodity bundle and prices are assumed given. In this case, the utility possibility curve will represent the utility levels realized by each of two persons as the bundle is distributed in varying quantities among them. In the second case the assumption of fixed prices is relaxed and prices are allowed to vary along the curve. Now, Little says, "they trace out the maximum utility level possible for one person given that of the other, on the assumption that each point corresponds to a point on the contract curve." The third possible case arises when the curve represents the utility possibilities of a given quantity of factors of production, as the factors are distributed between two people. Lastly, the curve could repre-

sent the levels of utility realized by the individuals as a given quantity of money was distributed between them in varying proportions. It would further be assumed that for each distribution of money the pricing and output policies would be those which would actually be followed by the productive units.

Little concludes by saying that:

> The closest approximation to the ordinary meaning would seem to be when the curve represents the utility possibilities of the factors of production under given prices and output policies.[26]

As has already been intimated, few recent authors have bothered to clarify what they take the curve to mean when they use it. With deference to Little, the present ordinary meaning now appears to be when the curve represents the utility possibilities of a given commodity bundle; or at least this is how many economists are disposed to regard it. Clearly, attributing this meaning to the utility possibility curve greatly restricts its use, and that for general analysis, Little's "ordinary meaning" is to be preferred.

Parenthetically, to retain the historical perspective, it should be noted that P.A. Samuelson employed utility

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[26] Ibid., p. 102.

possibility curves about the same time that Little did, that is, January 1950. Both Samuelson and Little regarded the axes as measuring ordinal utilities. Unfortunately, Samuelson does not clarify what he understands the curve to represent. By the use he makes of it, a strong argument can be made for believing that he regarded it as representing the levels of utility realized by each of two individuals as a fixed commodity bundle is distributed to them in varying proportions.

Returning now to the use which Little makes of the utility possibility curve we find that he begins by stating the welfare problem rather uniquely by suggesting that "the question which we now seek to answer is whether a change from one line (i.e. utility possibility curve) to another is a good thing." The answer, he contends, depends on whether it is, in fact, possible to make distributional changes. The possibility that redistributional changes may be precluded by other considerations forces Little to expand his exposition. He notes that under circumstances where redistributional changes are impossible, that is, where only one point on each utility possibility curve is attainable, the question whether the change should be made is the same as the question "whether welfare would be increased." To this question there is no general and unequivocable answer. Little demonstrates by the use of utility

possibility curves that the answer depends on the positions of the two curves and on the points on the curves which indicate the initial and final utility levels of the individuals involved. In two of eight possible situations, Little finds that it is impossible to recommend or condemn the proposed change. However, when any point on either of the two utility possibility curves is attainable, the welfare economists, by using the Scitovsky criterion à la Little and a value judgment on the distribution of income, can pronounce any change to be either good or bad, insofar as it may or may not increase welfare.

Still using the same set of utility possibility curves, Little demonstrates with forceful certitude that neither the Hicks-Kaldor nor the Scitovsky criterion alone is a sufficient criterion for an increase in welfare.

Following his demonstration of the deficiencies of any single criterion, Little attempts to answer charges that the use of any type of compensation principle is redundant in his schema. Confronted with the argument that whoever is capable of deciding what is the best distribution of income should also be capable of deciding directly which of two points on two utility possibility curves is the superior welfare position, Little replies that "this criticism would be overwhelming if it were true that our 'someone' already had well-ordered preferences between all con-

figurations of the economic system."[27] He completes his counter-argument by pointing out that, in fact, people do not and probably are not capable of having these well-ordered preferences. Hence the Scitovsky criterion à la Little is an "essential intermediary" in ordering these preferences and as such it cannot be considered redundant. At bottom, Little's argument rests on the easily-accepted belief that superman is a myth.

The remainder of Little's discussion, while interesting and valuable in itself, only tends to substantiate and enforce his principal contentions. These, as we have seen, were clearly spelt out in his "Foundations" article. This article, and not the Critique, is the most important in the development of the compensation principle, for while the latter is superior in exposition, it was in the former that the seeds of discontent were sown.

The next villain in the obliteration of the compensation principle was P.A. Samuelson. Samuelson graciously bestowed his "kiss of death" in the Oxford Economic Papers for 1950.[28] Following Little, Samuelson recognized two distinct problems involved in maximizing welfare. The first of these was the choice of a commodity bundle and

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[27] Ibid., p. 106.

[28] P.A. Samuelson, "Evaluation of Real National Income", Oxford Economic Papers, N.S. II (January, 1950), 1-40.

the second was the distribution of the bundle. He proposed that the distribution of the bundle be postponed until an appropriate private bundle had been chosen, but in making this proposal he required a much more rigid criterion for a superior commodity bundle.

The essence of the Hicks-Kaldor criterion was that for at least one distribution of the commodity bundle resulting from a change, the gainers should be able to compensate the losers for their loss. Samuelson, however, required that for one commodity bundle to be superior to another, it must for every distribution be superior to the other. This implies that the utility possibility curve, say Q_2Q_2 corresponding to a commodity bundle, must lie entirely outside the utility possibility curve, Q_1Q_1, of the inferior commodity bundle. If this condition is not met, that is, if any part of Q_2Q_2 should lie within Q_1Q_1, then at a later stage when a decision on the distribution of the bundle must be made, it may happen that economic welfare will actually have been decreased by moving to Q_2Q_2. In summarizing his paper, Samuelson writes: "The only consistent and ethics-free definition of an increase in potential real income of a group is that based on a uniform shift of the utility possibility function for the group."[29]

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[29] Ibid., p. 7.

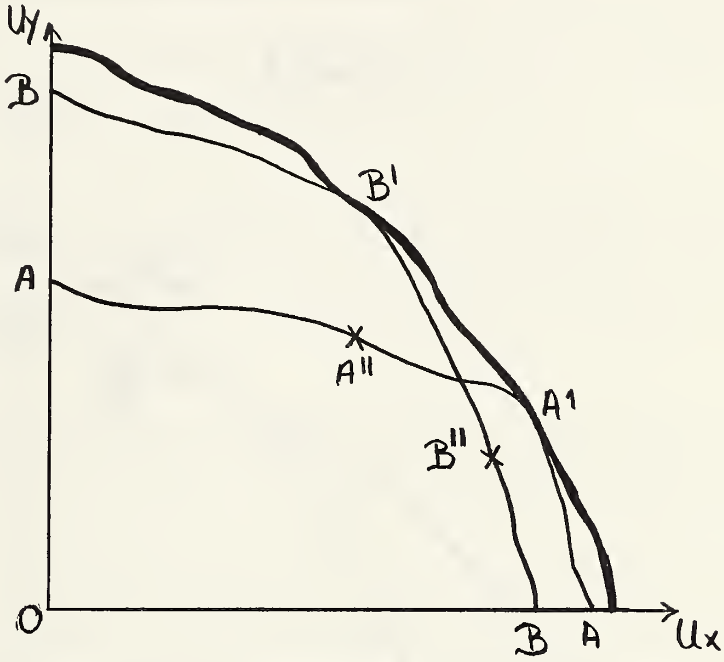
Samuelson demonstrates his point with the use of a utility frontier which depicts the boundary of all possible utility combinations, given the resources of the community, or, to put it another way, given the production possibility curve. The utility frontier is, then, an envelope of all possible utility possibility curves. Samuelson and Mishan both argue that only two value judgments are needed to construct a utility frontier: first, it must be assumed that the individual is the sole judge of his own welfare, and, secondly, that the welfare of the community does, in some sense, depend upon the welfare of the individuals who comprise it. It can easily be shown that the curve is a locus of Paretian optima but without the use of further value judgments an optimum optimorum cannot be specified.

Now Samuelson argues that starting from a suboptimal position it will always be possible to move to a position on the utility frontier, which by definition is a Paretian optimum. It does not follow, however, that the change involves a movement from an inferior to a superior commodity bundle. For example, in the accompanying diagram, a movement from A^{11} to B^{1} represents a movement from a suboptimal to a Paretian optimal position.

All individuals are made better off and the reorganization fulfills the Paretian criterion. It does not fulfill the Samuelson criterion because A^{1}, which is on the AA

utility possibility curve, also is a Paretian optimum.

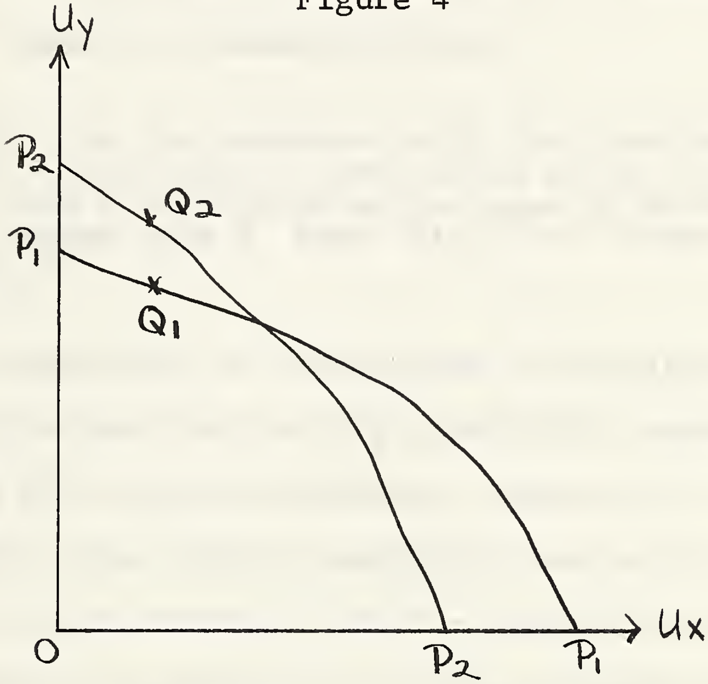
Figure 3



Moreover, without a value judgment on distribution, it is not possible to say that B^1 is superior to A^1. Hence it can be seen that whether an efficiently produced commodity bundle is able to satisfy Paretian optimum conditions depends on its distribution. No commodity bundle taken from a particular transformation curve will be superior to all the other possible commodity bundles on the transformation curve for all distributions. Thus, Samuelson concludes that without a statement regarding distribution, no commodity bundle on a transformation curve can be said to be superior

to any other. This conclusion is not unique but the use Samuelson makes of it is. He asks that we suppose a society is at a point Q_1 on a production possibility curve P_1P_1 as shown in the accompanying diagram.

Figure 4



Now suppose that the transformation curve shifts to P_2P_2 so that part of the curve now lies above the old curve P_1P_1 and part of it lies below P_1P_1. Suppose, however, that the shift is such that it is possible to move to Q_2 on P_2P_2 which has more of all goods than Q_1. The utility possibility curve for Q_2 will lie outside and above the utility possibility curve for Q_1. It would now seem that one could unequivocably say that welfare would be increased by moving to Q_2. However, for Samuelson, such a statement would be fallacious,

for although Q_2 would permit the movement to a superior utility possibility curve, it will not permit a movement to a superior utility frontier. The utility frontier which corresponds to P_2P_2 will lie below the utility frontier through part of its range and therefore it cannot be said that it is superior. Samuelson writes:

> Up till now the one unshaken truth that remained was this: if more of every good is observed in point A than in point B, then A represents an increase in potential real national income over B. Even this is no longer necessarily valid![30]

The resolution of the paradox is explained by distinguishing between the utility possibility curve of a "point" and the utility possibility function of a situation. Roughly, the utility possibility curve of a point corresponds to the familiar utility possibility curve; that is, the utility possibility of a given commodity bundle can be illustrated by a utility possibility curve which is the locus of points traced out by distributing the commodity bundle in varying proportions between individuals. The essence of Samuelson's argument is that a point, or a single commodity bundle, is a particular manifestation of a unique "situation." Here "situation" may be interpreted as being a production possibility curve. Thus we are now

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[30] *Ibid.*, p. 13.

confronted not only with the choice of distribution but the choice of a particular point or position on the transformation curve. This is tantamount to the choice of a particular position on the utility frontier of the production function on which the point lies. As we have already seen, there are no unequivocable grounds for saying that any particular point on the utility frontier is superior. Hence we are unable to say that Q_2 is superior welfare to Q_1, although it contains more of all goods.

Apparently the only type of change which would produce an unequivocable increase in welfare is one which would shift the whole transformation curve northeast. This is indeed a demanding criterion.

Following Samuelson, a number of economists attempted to patch up the now-very-tattered compensation principle. No sooner were the patches in place, however, when yet another author would come along and tear them off only to expose the weakness anew. Among those who ravaged the Kaldor-Hicks off-spring, perhaps none did so with as telling effects as W.M. Gorman. In "The Intransitivity of Certain Criteria Used in Welfare Economics,"[31] Gorman seems to have buried the hypothetical compensation principle

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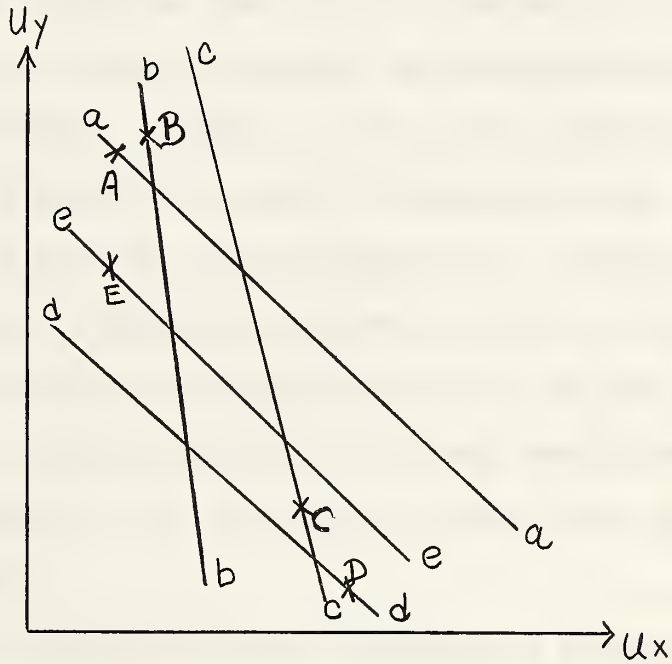
[31] W.M. Gorman, "The Intransitivity of Certain Criteria Used in Welfare Economics", Oxford Economic Papers, VII (February, 1955), 25-35.

once and for all. He proved that even the Scitovsky criteria was not a safeguard against contradiction. In the accompanying diagram, suppose that we begin at the initial position A on aa. Now suppose it is possible to move to B on bb and that the move is undertaken.

Figure 5



Clearly the Scitovsky criterion is satisfied. From B suppose that we move to C on cc, from here to D on dd and from here to E on ee. Each move is sanctioned by the Scitovsky criterion, but E is obviously inferior to A. This is Gorman's "contradiction."

He suggests that the only time that the Scitovsky

criterion will provide a reliable guide is when none of the utility possibility curves intersect. In such a case, however, the Hicks-Kaldor criterion alone would be adequate. Gorman's contradiction does not arise if a pronouncement is made on the distribution of income. Hence, Little's use of the compensation principle would not be open to Gorman's criticisms.

Thus the denigration of the compensation principle appears to be complete. For all its weaknesses, and these are manifest, it does not appear to be eradicated from the literature yet. However, it does not appear that economists are anxious to see it resurrected as a principle by which policy can be formulated. Looking back over its conception, childhood, and now senility, it appears that it has not had a fruitless life for it has been responsible for the clarification of many basic issues in welfare economics, not the least of which was the role of value judgments.

Perhaps one of the most remarkable aspects of the development of the compensation principle (and the "New Welfare Economics") is that many of the contributors displayed almost negligible awareness of what the original issues were. In its infancy, the compensation principle was advanced by Kaldor and Hicks in the earnest belief that its acceptance would liberate welfare economics from the

dominance of value judgments. Today, when the impossibility of a value-free welfare economics is widely recognized, the early hopes of these highly respected economists have an aura of incredulity. Kaldor, as we have seen, thought that the theory underpinning the compensation principle admitted only one value judgment -- whether compensation ought or ought not to be paid -- and this he excluded from the province of the economist. Similarly, Hicks redefined the "economic problem" so that the economist was primarily and almost solely concerned with "efficiency." Drawing upon the contributions of Little and Samuelson, it can be clearly seen that "efficiency" cannot be divorced from distribution. In retrospect, it appears that overriding concern with interpersonal comparisons so fully occupied the attention of these early contributors that their eyes were closed to a multitude of value judgments lurking in the shadows of their analysis.[32]

With the exceptions of Little and Samuelson, the intentions of Kaldor and Hicks were either accepted without further question or misinterpreted. Those who misinterpreted

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[32]Little says of Kaldor and Hicks: "They did, or do, think that interpersonal comparisons are illegitimate. Therefore, they defined the phrase 'an increase in economic welfare' without reference to the distribution of real income. At the same time they did not understand that 'increase of welfare' is an ethical phrase, and so did not recognize the value judgment which is implied in their definition". Little, _Critique_, p. 87.

the early contributions appear to have regarded the compensation principle as an attempt to formulate an answer to a much narrower question. Rather than trying to find concepts from which a value-free welfare economics could be constructed, and rather than attacking the compensation principle from this angle, they appear to have concentrated almost entirely on the compensation principle as a reliable test for an increase in welfare. Underpinning all their discussions, but seldom, if ever, explicitly recognized, were two very important value judgments. The first of these was that "The welfare of the community ought to be increased." The second, and more contentious, was that "It is a good thing that an individual be made better off if none is worse off." Both of these value judgments have significant implications.

It should be noted that the first value judgment is stated in terms of "welfare" and not "economic welfare." In most protracted discussions of welfare theory, a warning is advanced that "economic welfare" is only a part of a greater whole -- "welfare"; and that there might not be a direct correlation between "economic welfare" and "welfare." Hence it is posited that as "economic welfare" increases, "welfare" may, in fact, decrease. Moreover, it is widely conceded that "welfare" and not "economic welfare" ought to be maximized. Having made these warnings, the authors

too often proceed to forget them. Policies or analyses are habitually recommended without qualification if they are believed to increase economic welfare or provide a test for an increase in economic welfare. In short, most, if not all, "welfare propositions" are recommended on the basis of the questionable judgment of fact that "welfare" and "economic welfare" are directly correlated. Welfare economists have ignored, or have failed to recognize, that verifying or repudiating this judgment of fact is a necessary and urgently required step in the advancement of their study. Until it is successfully made, all their conclusions are disputable. They can only avoid it by restating the initial value judgment to read: "The economic welfare of the community ought to be increased." Stated this way it is likely to have a much narrower acceptance.

The second value judgment -- "It is a good thing that an individual be made better off if none is worse off" -- also has disturbing implications. There is a suspicion in much welfare literature that an individual's welfare is closely associated with his relative level of consumption, especially after some minimum level has been passed. Little expresses this feeling succinctly:

> It has long been recognized that much of the misery of becoming poorer springs from the failure to keep up with the neighbours, or with one's own class; that much of the pleasure of becoming richer lies in moving up the

> social scale, in rising 'above' one's acquaintances. That this is true of some luxury expenditure is clear. It is needless to elaborate on this theme.[33]

For those who contended (especially Hotelling, Kaldor, Hicks, and Scitovsky) that the compensation principle could be used without a value judgment expressing the "proper" distribution of income, recognition of this fact plays havoc with their analyses. It is clear that "original position" has been interpreted as the original indifference curve. As Little has argued persuasively, an indifference curve analysis cannot incorporate the effects of a change in an individual's "relative" level of consumption.[34] It seems precisely for this reason that Little comes to the conclusion that:

> . . . it does not follow logically from the meaning of behaviour lines that anyone who can be said to be 'on a higher behaviour line' must also be said to have more satisfaction -- all that follows is that he is in a chosen position.[35]

Thus, simply returning an individual to his original position may entail a loss of welfare for him.

The difficulty does not arise if a pronouncement is

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[33]<u>Ibid</u>., p. 43.

[34]<u>Ibid</u>., especially Chapters II and III.

[35]<u>Ibid</u>., p. 29.

made on the distribution of income. Once such a pronouncement is made, the relation, that is the relative position, of one income group to another is fixed. Thus an individual could not experience a loss of welfare due to the deterioration of his relative position. One of the principal merits of the Little-Samuelson approach is that this problem is overcome by requiring an explicit value judgment on the distribution of income. For the purposes of this study, the compensation principle à la Little, as we have dubbed it, will be adopted.

The three value judgments which Little believed were implied or necessary for his compensation principle have already been mentioned. Explicit note should be taken here of the fact that they do not conform exactly to those which we suggest were implied by the analysis of the earlier contributors. In the place of "Welfare ought to be increased," he substituted ". . . an individual is better off if in a chosen position."[36] A crude approximation of this in more familiar terminology would be: "An individual is made better off by an increase in economic welfare."[37] Little

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[36] Little, "Foundations", p. 237.

[37] See Little, <u>Critique</u>, especially Chapters II and III. Little adds several important qualifications to the meaning of "in a chosen position" which render our "translation" somewhat inaccurate. It may also be suggested that Little advances "in a chosen position" not as an equivalent to "an increase in economic welfare" but as an "acceptable criterion". Such an argument would seem unconvincing, for Little himself at times appears to regard the two as interchangable.

would appear to accept the factual proposition that there is a direct correlation between "welfare" and "economic welfare."

In the Critique, Little stressed that the weakest sections of the "foundations" of the compensation principle are not the value judgments, for he believes these would have wide acceptance, but the weakness lies with the factual assumptions which must be made. First it is necessary to assume that individuals will be eternal and perfectly consistent. Only if they are perfectly consistent will "in a chosen position" imply 'on a higher behaviour line.'[38] If "in a chosen position" does not imply 'on a higher behaviour line' then it is not possible to argue that "in a chosen position" can be interpreted to mean an increase in economic welfare. Following Little, we make the factual assumption that individuals will be perfectly consistent.

Little also finds it necessary to assume away the effects of a change in an individual's relative level of consumption. It has been argued that certain types of value judgments on the distribution of income preclude the possibility of a loss of economic welfare arising because of changes in an individual's relative level of consumption. Clearly, however, there are value judgments on the distribu-

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[38] Little, Critique, p. 42.

tion of income which do not preclude this possibility.[39] In the "Foundations" Little adds parenthetically that his use of the compensation principle is dependent upon the realism of the following "factual assumption": consistency of choice on the part of eternal individuals, absence of dynamic elements, applicability of marginal analysis, etc.[40]

It is interesting and worthwhile noting that in the "Conclusion" to the Critique, Little restates his value judgments; unfortunately, they are put in the form of valuational statements. While retaining a value judgment on the distribution of income, he restates his two "general value premises" to read: "An individual becomes better off if he is able to reach a position high up in his order of choice" (replaces ". . . better off if in a chosen position") and "The community is better off if one individual becomes better off and none worse off."

Both of these valuational statements can be cast in the form of a comparative value judgment. The first may be

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[39] The best example of a value judgment on the distribution of income which would preclude the possibility of a loss of economic welfare due to a change in an individual's relative level of consumption would be one which required income to be distributed equally, i.e. extreme communism. One which would not preclude this possibility would be one which set a maximum and minimum level of income and permitted the position of individuals in this range to be determined by market forces.

[40] Little, "Foundations", p. 237.

stated: "It is a good thing to increase the economic welfare of an individual";[41] the second, "It is a good thing to increase the welfare of the community."[42] In the comparative form it is less equivocable what the value judgments are and it is for this reason that the distinction between "telling" and "suggesting" was cited as of some importance. In both his "general value premises," Little, by the use of the conditional, provides a criterion by which the increase in welfare of the individual and the community may be said to increase.

Thus in the following chapters where the compensation principle à la Little is employed, we shall assume that the value judgments underpinning it can be stated in the more generalized forms stated above. To avoid tedious repetition, a more thorough investigation of the factual assumption and their implications has been reserved for Chapters III and IV.

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[41]Following the argument developed in Chapter I (especially discussion of "good" and "bad" worlds), the comparative value judgment "It is a good thing to increase the welfare of an individual" implies that "It is a bad thing to decrease the welfare of an individual".

[42]Both of these value judgments are easily transcribed into the "ought" or "imperative" form. For example, "The economic welfare of the individual ought to be increased", and "The welfare of the community ought to be increased".

CHAPTER III

MARGINAL COST PRICING: AN ATTEMPT TO FORMULATE A VALUE - FREE PUBLIC POLICY

Introduction

The extensive body of literature which has grown around marginal cost pricing is one of the most notable unresolved controversies in economics. Among the principal reasons it has, and continues, to defy resolution is that the disputants have begun with incompatible value judgments which precluded the possibility of unanimity on policy. This attribute makes the marginal cost pricing controversy an admirable testing ground for our understanding of a value judgment and for the application of the compensation principle. After outlining the controversy, the opposing sets of value judgments will be isolated. It will remain for Chapter IV to see how useful the compensation principle is in overcoming these value judgments. Thus the purpose of outlining the marginal cost pricing controversy is to provide an opportunity to test how appropriate and useful our conception of a value judgment is, and further, to examine how far the compensation principle is able to overcome value judgments which are actually involved in the marginal cost pricing controversy.

Because of the great bulk of literature on marginal cost

pricing it has been necessary to be selective; nevertheless, an attempt has been made to demonstrate the continuity of the development of the controversy. Practically nothing has been said of a vast literature which developed during the 1930's. Its primary concern was with the relative merits of socialism and capitalism, but it had direct bearing on the significance of the marginal cost pricing controversy.

Part I

In tracing many of the more protracted and colourful controversies in economics it is often useful and necessary to begin with Marshall's Principles; such is the case with the marginal cost pricing controversy. Marshall had a strong proclivity for burying seemingly innocuous ideas in footnotes and parenthetical allusions. Often he leaves the structure he is working on incomplete and the reader is, unhappily, left to gather what bricks and planks he can to finish it. It is not surprising then that some have built a mansion out of what was originally intended to be a toolshed. Doubtless, Marshall's discussion of increasing, constant, and decreasing cost industries and the "Doctrine of Maximum Satisfaction" has suffered such a fate.[1]

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[1]N. Ruggles, "The Welfare Basis of the Marginal Cost Pricing Principle", Review of Economic Studies, XVIII (1950), p. 41 credits Pigou (wrongly?) with saying that his achievements in these matters "were intended only to be a translation of the Marshallian analysis." In fact, however, Pigou's analysis is far more elegant and only by being unduly generous to Marshall could he regard his analysis as a "translation." For an excellent discussion of the advances Pigou made over Marshall see Hla Myint Theories of Welfare Economics (New York:Augustus M. Kelly, Bookseller, 1962), esp. Chapters IX, X.

For analytical purposes, Marshall distinguishes three types of commodities: the first type "obeys the laws of constant returns"; the second type is produced with diminishing returns or increasing costs, and the third type is produced with increasing returns or decreasing costs. While in another context Marshall distinguishes external and internal economies and diseconomies to the firm and to the industry, he does not, in the present context, indicate the origin of the economies and diseconomies which give rise to increasing, decreasing, and constant costs. This would suggest that their origin is unimportant and without significance to the Doctrine of Maximum Satisfaction.[2]

From both Marshall's geometric exposition and the application of some of his conclusions, it appears, however, that he was concerned with the supply curve of the industry (and therefore with economies which were internal or external to

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[2]Yet only a few pages before beginning his exposition of the Doctrine of Maximum Satisfaction, Marshall warns:

> "The next point to be observed is that the tendency to a fall in the price of a commodity as a result of a gradual development of the industry is quite a different thing from the tendency to the rapid introduction of new economies that is increasing its business."

A. Marshall, Principles of Economics (8th ed.; London: MacMillan and Company, Ltd., 1959), p. 78.

As shall be seen later, authors have pointed out that Marshall's analysis makes little sense if the possibility of all types of economies and diseconomies are admitted.

the industry and not to the firm) and not with the supply curves of individual firms. A further point for dispute is the nature of the industry;[3] Marshall seems to imply that the three basic cases he considers are applicable to any market structure. One can only surmise that this is what, in fact, he meant, for he is silent on the point. This is important as long as there is uncertainty with regard to the origins of the economies.[4] Mitigating the uncertainty arising from these shortcomings is that Marshall's analysis is long-run. In the Marshallian long-run, the nature of the industry and the market structure can change; this, of course, introduces dynamic elements into what is essentially a static analysis; nevertheless, their introduction goes a long way towards resolving the incompatibility of Marshall's geometric exposition which is presumably applicable to all market structures and his silence on the origin of the economies. By introducing the dynamics of the long-run, economies internal to the firm are no longer incompatible with perfect competition in the short run. Having made these reservations, it is possible to outline Marshall's analysis.

Marshall illustrates the effects of a tax and a bounty on

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[3]This would cease to be disputable if the only economies Marshall was concerned with were internal or external to the industry.

[4]For example, as shall be indicated later, Robinson and Knight demonstrated the incompatibility of perfect competition and continuing internal economies to the firm.

constant, decreasing, and increasing return industries. The analysis is cast in terms of consumers' surplus.[5] At the outset it should be noted that Marshall's use of consumers' surplus presupposes the validity of interpersonal comparisons of utility.

In Figure 1, DD is the demand curve, Ss is the supply curve before the imposition of the tax. Assume a tax equal to SS^1 per unit of X is imposed, shifting the supply curve to S^1s^1. Both Ss and S^1s^1 represent constant returns or constant costs. In the initial position, consumers' surplus is DSA; after the imposition of the tax SS^1, consumers' surplus is DS^1B and the loss of consumers' surplus is equal to S^1SAB. The revenue from the tax equals S^1SCB, which is less than the loss in consumers' surplus. For equal taxes, the loss in consumers' surplus will depend on the elasticity of the demand curve and will be greater, the greater the elasticity of the demand curve. The effects of a bounty or subsidy can similarly be illustrated.

Suppose in Figure 1 that S^1s^1 is the original supply curve and that a subsidy of S^1S^1 is granted for each unit of X. The supply curve now falls to Ss. Initially, consumers' surplus was equal to DS^1B; after granting the subsidy it becomes

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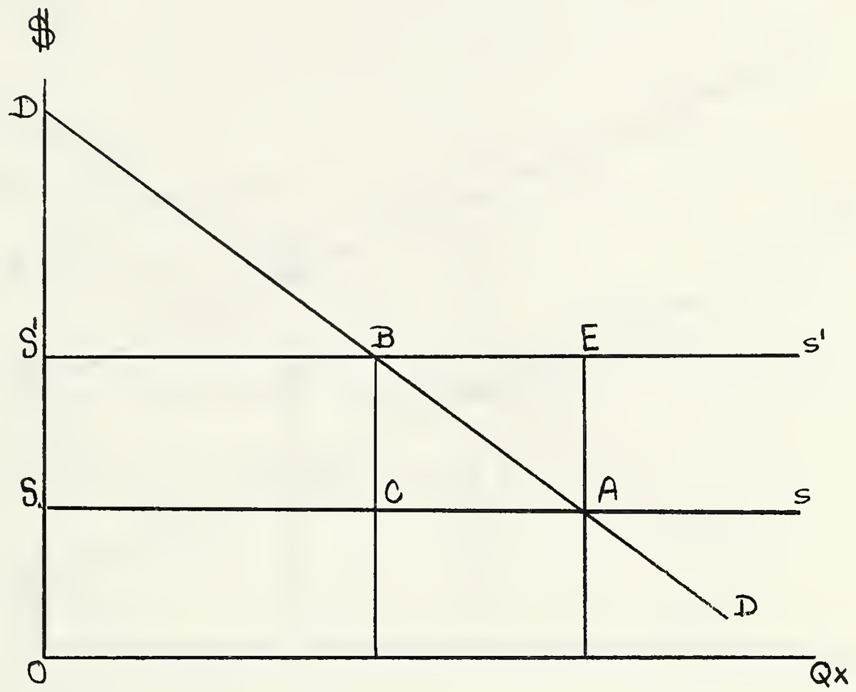
[5]Surprisingly, Marshall does not include any consideration of producers' surplus in his analysis. He does warn, however, that general conclusions cannot be drawn from his analysis unless the effect of the tax or bounty on producers' surplus is known.

DSA, increasing consumers' surplus by S^1SAB. The subsidy is equal to S^1SAE which is greater than the increase in consumers' surplus S^1SAB; thus, within the context of constant returns the gain in consumers' surplus created by a subsidy is less than the amount of the subsidy.

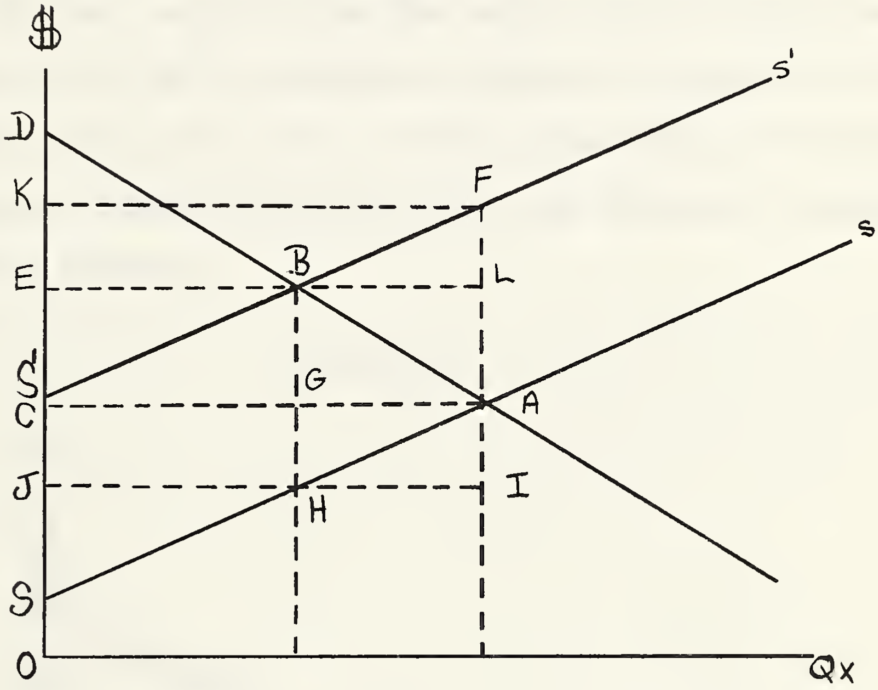
Figure 1



The case of decreasing returns can be similarly illustrated, except now it is necessary to borrow more letters from the alphabet for the graphic illustration. In Figure 2, DD is again the demand curve, Ss is the supply curve before the imposition of the tax SS^1 and S^1s^1 is the supply curve after the tax. Before the tax, consumers' surplus equals DCA; after the tax it is diminished by ECAB and equals DEB. The revenue raised by the tax equals EJHB. EJHB <u>may</u> be greater

than the loss of consumers' surplus ECAB; it will be greater if the commodity is produced with rapidly diminishing returns. If it is produced with only slightly diminishing returns, Ss and S^1s^1 will be nearly horizontal; then BGA may be greater than CJHG and therefore ECAB will be greater than EJHB.

Figure 2

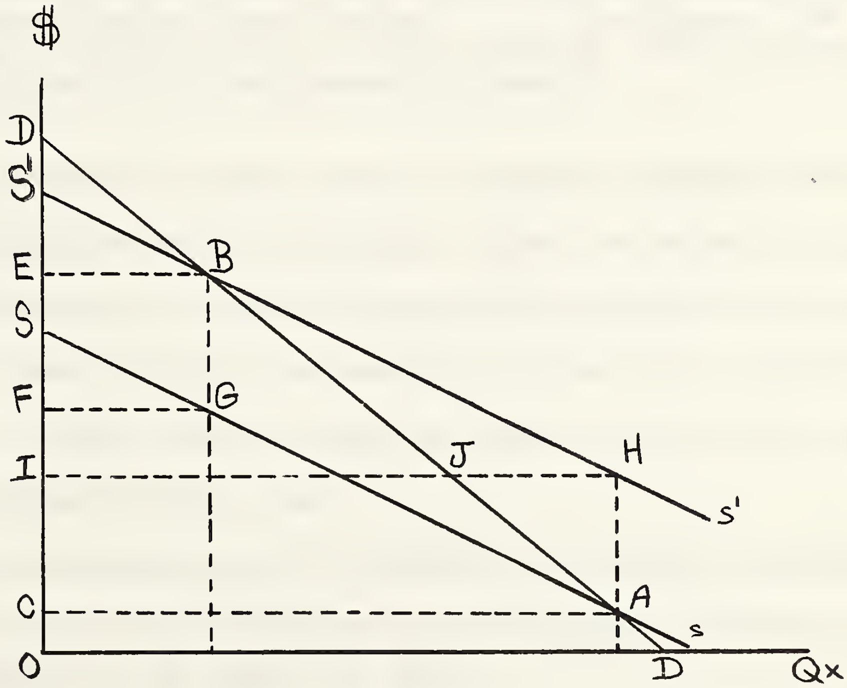


Conversely, for the granting of a subsidy, assume the original supply curve is S^1s^1, the subsidy equals S^1S per unit of X. The initial consumers' surplus is DEB; after the subsidy, it increases by ECAB and equals DCA. The subsidy equals KCAF which will be greater than the increase in consumers' surplus ECAB. It can be concluded, therefore, that the revenue from a per unit tax may be greater than the resulting loss in consumers' surplus and that the increase in consumers' surplus following

the granting of a subsidy will be less than the size of the subsidy. We now come to the last case.

The Marshallian long-run declining cost curve, or the increasing returns case, declines not because of innovations but because of increased efficiency of organization. In Figure 3, DD is the demand curve, Ss is the supply curve before the tax, and S^1s^1 is the supply curve after the imposition of tax SS^1. Consumers' surplus is initially DCA; after the tax it declines by ECAB to DEB. Here, the revenue from the tax equals FGBE which is less than the decline in consumers' surplus.

Figure 3



Turning now to the granting of a subsidy, suppose S^1s^1 is the original supply curve and a subsidy equal to S^1S per unit is granted. The supply curve is now Ss. Initially, con-

sumers' surplus equals DEB; following the subsidy which equals ICAH, it increases by ECAB and equals DCA. The subsidy ICAH may be less than the increase in consumers' surplus ECAB. The conclusion reached in the case of increasing returns is that a tax will decrease consumers' surplus by more than the revenue raised by the tax and that a subsidy may increase consumers' surplus by more than the amount of the subsidy, depending upon how rapidly increasing returns set in.

Having arrived at these conclusions, Marshall integrates them into the "Doctrine of Maximum Satisfaction". He writes:

> But occasionally it is stated, and very often it is implied, that a position of equilibrium of demand and supply is one of maximum aggregate satisfaction in the full sense of the term: that is, that an increase of production beyond equilibrium . . . diminishes the aggregate satisfaction of both parties. The doctrine so interpreted is not universally true.[6]

For Marshall, there are two reasons why this doctrine cannot claim universal validity. First, he says, it assumes that difference in wealth between individuals can be neglected and that "the satisfaction which is rated at a shilling by any one of them, may be taken as equal to one that is rated at a shilling by any other."[7]

This assumption may be used as a working hypothesis, but

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[6] Marshall, op. cit., p. 390.

[7] Ibid.

Marshall feels that it contradicts observable facts. Even after granting this assumption, Marshall is able to hamstring the doctrine on other grounds.

He argues that the second invalidating assumption assumes that "every fall in price which producers receive for the commodity, involves a corresponding loss to them."[8]

This assumption, he argues, is not true when the fall in price results from "improvements in industrial organization." Following this, Marshall points out that under increasing returns production beyond the equilibrium level will result in some loss to the producer, but he says, "this loss may be very much less than the money value of the gain to purchasers which is represented by the increase of consumers' surplus."[9]

Marshall concludes that when a decreasing cost industry exists, consumers may be able to increase aggregate welfare by subsidizing this industry. On this basis, Marshall believed that the doctrine which implied that aggregate satisfaction was maximized by the mere equilibrium of supply and demand was invalidated.

Marshall suggests two ways that the money to subsidize an increasing returns industry may be raised; the first possibility is the levying of a tax "by the community on

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[8] Ibid., p. 391.

[9] Ibid.

their own incomes." The second, and more intriguing, possibility, is to levy a tax on increasing cost industries. Both these approaches, Marshall finds, are open to objections and in practice a myriad of considerations must be taken into account.

In closing his discussion, Marshall makes one further point of interest and importance. He first remarks that if an individual purchases the services of the poor rather than of the rich, the aggregate welfare is increased because "the happiness which an additional shilling brings to a poor man is much greater than that which it brings to a rich one."[10] Seemingly, this is an unqualified acceptance of interpersonal comparisons of utility. Continuing in the same vein, he argues that, apart from the first consideration, "the manner in which a person spends his income is a matter of direct economic concern to the community." For example, if the individual purchases a commodity produced by an increasing cost industry, he makes the commodity "more difficult to be obtained by his neighbours." This lowers the real income of the community below what it would have been if the individual purchased a commodity produced by a decreasing cost industry, because, by purchasing commodities

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[10]Ibid., p. 393. Here Marshall's analysis is in terms of gross aggregate welfare. He overlooks the possibility that the disutility to the poor of earning an additional shilling is apt to be greater than the disutility to the rich of earning an additional shilling.

produced by decreasing cost industries, he makes the commodity available to other purchasers at a lower price and, consequently, contributes to a rise in real income.

Having come to these conclusions, Marshall writes:

> These conclusions, it will be observed, do not by themselves afford a valid ground for government interference. But they show that much remains to be done, by a careful collection of the statistics of demand and supply, and a scientific interpretation of their results . . . .[11]

Many authors following Marshall failed to display this hesitation in concluding that government intervention was justified.

The second contributor to the literature on marginal cost pricing was, appropriately, Marshall's scion, Pigou. Pigou's original contribution appeared in his Wealth and Welfare, published in 1912. Substantially the same material was incorporated into The Economics of Welfare, which first appeared in 1920. Pigou's treatment is both more extensive and more rigourous than Marshall's.

Pigou arms himself with some rather formidable jargon and finely-distinguished concepts. The first of these is the Marginal Social Net Product, which is defined as:

> . . . the total net product of physical things or objective services due to the marginal increment of resources in any given use or place, no matter to whom any part of this product may accrue.[12]

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[11] Ibid., p. 394.

[12] A.C. Pigou, The Economics of Welfare (4th ed.; London: MacMillan and Company, Ltd., 1960), p. 134.

The Marginal Social Net Product (MSNP) includes all benefits, damages, external economies, in fact, everything except psychical consequences, are included, and these are excluded only for reasons of analytical convenience.

Contrasted with the MSNP is the Marginal Private Net Product (MPNP). This is defined as:

> . . . that part of the total net product of physical things or objective services due to the marginal increment of resources in any given use or place which accrues in the first instance -- i.e. prior to sale -- to the person responsible for investing resources there.[13]

The MPNP can be either equal to, greater than, or less than the marginal social net product.

If the reader will suffer yet one more quote, the meaning of the "value" of these two concepts can be clarified:

> The value of the marginal social net product of any quantity of resources employed in any use or place is simply the sum of money which the marginal social net product is worth in the market. In like manner, the value of the marginal private net product is the sum of money which the marginal private net product is worth in the market.[14]

Thus armed, we may now venture into the Pigouvian world. The National Dividend, which is roughly comparable to

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[13] *Ibid*.

[14] *Ibid*., p. 135.

current concepts of Social Welfare, is maximized when the MSNP of resources in any use is equal to the MSNP of the resources in any other use. If, for example, the value of the MSNP of resources in a particular use was less than the MSNP in another use, then the money value of aggregate or social welfare could be increased by transferring resources from the employment where the MSNP is lower to the use where it is higher.

Pigou argues that there is only one "arrangement" of resources for which the values of the MSNP's are equal in all uses; and therefore, it follows that only this arrangement will maximize the national dividend.

The assumption that the national dividend will be maximized when the MSNP of resources in all uses are equated, is only justified if the MSNP declines the greater the volume of resources employed in a particular use. There are, however, two circumstances in which the MSNP may not decline as the quantity of resources in a particular use is increased. The first possibility is that the employment of additional resources in a particular use will lead to more efficient organization. This results in a decreasing supply price. For Pigou this implies that the marginal physical net product of a larger quantity of resources exceeds the marginal physical product of a smaller quantity of resources. Pigou defines the marginal (physical) net product of a factor of production as the "difference that would be made to the

aggregate physical production by withdrawing any small unit of the factor." In circumstances where the marginal (physical) net product of resources is increasing, it is possible that the different quantity of resources will produce the same MSNP. In other words, the MSNP of a resource may remain constant because the increase in marginal (physical) net product will offset the declining marginal utility of the product produced.

Secondly, Pigou suggests that the employment of additional resources in a particular use may, through time, lead to a permanent change in tastes, such that a commodity is more highly esteemed. If this should happen, that value of a unit of a larger production will, through time, be larger than that value per unit of the smaller production. Hence, it is possible that because of changing tastes, the MSNP of different quantities of resources may produce, through time, equal MSNP's.

Notwithstanding these qualifications, it still remains true that the national dividend will not be maximized unless the MSNP of a resource is simultaneously equal in all uses of the resource; what it is now possible to say is that simply equating the marginal social net product "need not attain an unequivocable maximum." When several resource arrangements are possible which equate the values of the MSNP, then each of these arrangements may be called a relative maximum, but one of these will be an absolute maximum.

It is possible, Pigou suggests, that an arrangement of resources which approximates that absolute maximum but does not equate the value of the marginal social net product for all resource uses will be superior to any arrangement other than the absolute maximum, including all relative maxima in which the MSNP for all resource uses is equated.

A further consideration must be appended to this discussion. Often the transfer of resources from one use to another will in itself entail costs. If the expected gain resulting from a transfer of resources is not expected to cover the resource transfer, then it should not be undertaken.[15] It follows from this that it is possible that a society could be in a suboptimal position, but to move to an optimal position the costs incurred may outweigh the gains and therefore, the best position for the society will be a suboptimal position.

Pigou concludes this discussion, saying:

> These considerations show that, even though the values of marginal social net product were everywhere equal or differ only in ways 'justified' by the costs of movement, there still might be scope for state action designed to increase the magnitude of the national dividend and augment economic welfare.[16]

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[15]Here Pigou asks the reader to compare a stock and a flow. He does not suggest how the comparison should be made; that is, he does not suggest how the benefits of the flow should be discounted.

[16]Pigou, op. cit., p. 141.

The type of state action taken may be either temporary or permanent. If it is temporary, it is designed to jar the system out of its present position of a relative maximum and to reestablish equilibrium at the absolute or a higher relative maximum. Temporary taxes, bounties, or tariffs might be used to these ends. Contrasted with temporary measures, are permanent measures which force the system to a new position and which must be retained to hold the system in its new position. If these permanent measures are rescinded, presumably the system would slide back to its original position.

So far this discussion has centered about one specialized type of state adjustment for it has, throughout, been assumed that the industrial system would realign itself so that the marginal social net product of resources in every use would equal the marginal social net product in every other use. As shall be seen, this implies that either the MSNP is equal to or in a fixed proportion to MPNP.[17] This is not a particularly realistic assumption, and therefore, it shall be dispensed with now.

Typically, the national dividend is determined by entrepeneurs who are interested in private net product and not

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[17]Although Pigou appears to believe that it is sufficient for MPNP to be everywhere in a fixed proportion to MSNP, Lerner proved that this was not a sufficient condition for maximizing national income.

social net product. Put another way, it is private or self-interest, and not social interest, which determines output. Self-interest, Pigou suggests, will tend to equate the MPNP of resources in all uses. However, it will not equate MSNP unless the MPNP and MSNP coincide and there is no particular reason why they should. Here, then, is the paradox: on the one hand, the national dividend is maximized (at least in a relative sense, but not necessarily in an absolute sense) when the marginal social net products of each resource use are equal; on the other hand, precluding state intervention, that national dividend will be determined by the equating of marginal private net product. Moreover, it seems that MSNP and MPNP will diverge in varying proportions and consequently, the national dividend will not be maximized.

The reason for the discrepancy between the values of the MPNP and the MSNP follows quite naturally from the definition of the two terms. Pigou says that the source of the discrepancy in "simple competition" is the fact that

> . . . in some occupations, a part of the product of a unit of resources consists of something, which, instead of coming in the first instance to the person who invests the units, comes instead, in the first instance (*i.e.* prior to sale if sale takes place), as a positive or negative item to other people.[18]

When the type of divergence exists it is possible for

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[18] Pigou, *op. cit.*, p. 174.

the state to eliminate the divergence by "extraordinary encouragements" or "extraordinary restraints" upon investment. Again, the most familiar forms these encouragements or restraints may take are as subsidies and taxes. This implies that in order to maximize the national dividend it may be desirable to interfere with the equating of marginal private net products; this in turn, implies abandonment of marginal private net cost pricing; it will be recalled that here we are dealing with simple competition.

We now come to an explicit and full-blown consideration of increasing, constant, and decreasing cost industries, the conditions which intrigued Marshall. For Pigou, an industry is an increasing, decreasing, or constant cost industry if an increase in output is associated with increasing, constant, or decreasing supply prices which arise from considerations apart from "changes in technique or other inventions not due to changes in the scale of output." A varying supply price may be viewed from two different standpoints -- that of the industry producing the commodity and that of the community. These two differences may arise because of the conditions under which the industry buys its factors of production. If the supply price of a commodity increases only because factor prices increase as output expands, then from the point-of-view of the community, the industry producing the commodity would not be an increasing

cost industry.[19] The industry, from its own point-of-view (simpliciter), would, however, regard itself as an increasing cost industry.

Pigou's translation of constant, decreasing, and increasing costs into the terminology of the MPNP and the MSNP is unique and at first brush rather mystic. He begins by establishing the relationship between MPNP and supply price by arguing that for the equilibrium firm the MPNP is "equal to the average net product (ANP) of the equilibrium firm per unit cost,[20] which is in turn equal to the

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[19] Pigou explains that it is a constant cost industry from the point-of-view of the community because:

> ". . . when the expenses per unit increase because it has to pay for the factors of production which it employs at a higher money price, the extra payment that it makes is offset by an equal and opposite extra payment which the owners of the several factors of production receive."

Ibid., p. 218. This explanation is not free from ambiguity. If the industry must pay higher money prices for additional factors of production, then, from the point-of-view of the community, the additional production will have a higher opportunity cost. A possible, but not altogether satisfactory, interpretation may be cast in terms of physical units. Thus, we may understand that constant costs from the point-of-view of the community means that the physical product resulting from the employment of additional resources is constant.

[20] Pigou's definition of the MPNP of a resource corresponds closely to accepted definitions of the MPP of a resource. In the present context, the MPNPa or MPPa must be thought of as accruing to the 'firm' or to the entrepeneur. Pigou demonstrates that for the equilibrium firm, MCx equals the supply price of x (SPx).

Therefore we have the following relationships:

$$\frac{MPNPa}{Pa} = \frac{MPPa}{Pa} = \frac{ANPa}{Pa} = \frac{1}{MCx} = \frac{1}{SPx}$$

Ibid., p. 804.

reciprocal of the supply price (SP).[21]

Pigou restricts the meaning of the MSNP by assuming that the social net product accrues only to the industry and not to the whole community. Now the MSNP of a resource for the industry will equal the reciprocal of the marginal supply price to the industry.[22] "Hence," Pigou says,

> . . . to say that the marginal private net product of investment in any industry is greater (or less) than the marginal social net product is the same thing as

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[21]Pigou defines the normal supply price of any quantity of output:

> ". . . as the price which will just suffice to call out a regular flow of that quantity when review is fully adapted to producing that quantity and no monopolistic action is undertaken."

Pigou, op. cit., p. 789.

[22]Pigou defines the marginal supply price to the industry as:

> ". . . the difference made to the total money expenses of the industry by adding a small increment of output."

Ibid., p. 804.

By defining the MSNP of a resource as the total net product of physical things or objective services which accrue to the industry, due to the marginal increment of resources within the industry, we also define the MPP of a resource to the industry (and not to the firm as is the usual case). It should also be noted that the definition of marginal supply price is equivalent to the "marginal cost to the industry" of producing "a small increment of output."

Thus we have the following relations:

$$\frac{MSNPa}{Pa} = \frac{MPP}{Pa} \text{ (to the industry)} = \frac{1}{MCx} \text{ (to the industry)} = \frac{1}{MSP}$$

to say that the supply price is less (or greater) than the marginal supply price of the industry.[23]

Pigou demonstrates that in a multiple firm industry the value of the MPNP is greater than the value of the MSNP for increasing cost industries, less than the MSNP for decreasing cost industries, and equal to the value of MSNP for constant cost industries.

To carry the discussion further, it is necessary to introduce the concepts of ideal investment and ideal output. Pigou defines ideal investment in an industry as the level of investment at which the MSNP of the resources (in the restricted sense) in the industry equals the MSNP generally prevailing in the community. The ideal output of the industry is the output which results from the ideal level of investment. The national dividend will be maximized only when each industry is producing its ideal output or when the MSNP of resources in each industry is equal to the MSNP of resources in every other industry.

From the above discussion we can conclude that in the framework of a competitive model where the value of the MPNP in each industry equals the value of the MPNP in every other industry, then if in some industry the value of the MSNP is less than the value of the MPNP, the output in that industry is greater than the ideal output.

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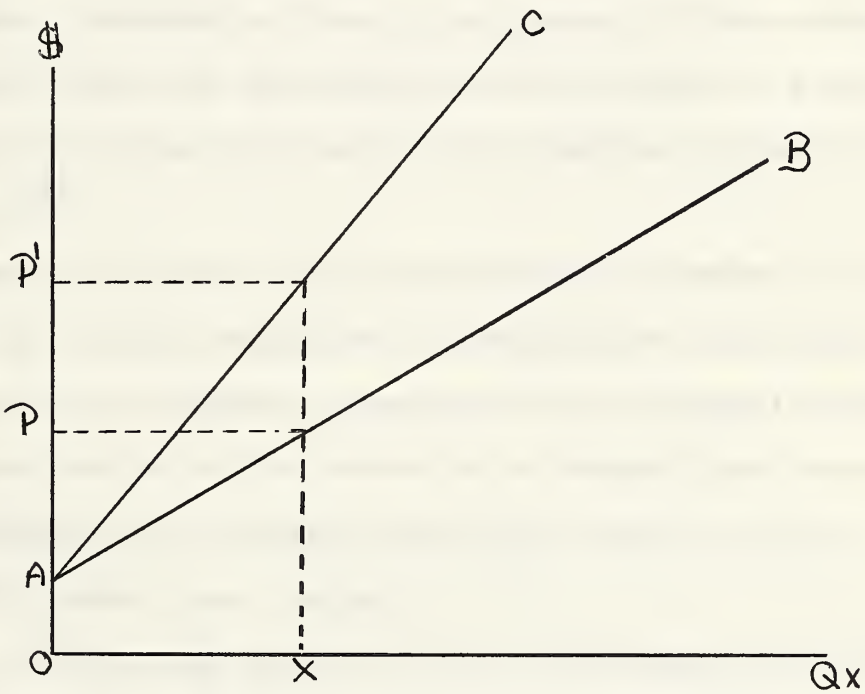
[23] Ibid., p. 222.

This can, perhaps, be easily illustrated by the use of more familiar terminology and a diagram. In Figure 4, AB is the industry supply curve and AC is the industry marginal supply curve. From the above discussion it can be seen that for a firm in equilibrium, the MPNP is the reciprocal of the supply price and that the MSNP is the reciprocal of the marginal supply price.

Figure 4



At output OX, the supply price, OP, is less than the marginal supply price OP^1 or SP (supply price) < MSP (marginal supply price). Therefore it follows that MPNP > MSNP. Now, if the MSNP is not equal to the MSNP of resources in general, the national dividend could be increased, Pigou

suggests, if a per unit tax was levied on the output of X. There will be some optimum tax which will reduce the output of X such that the fall in the marginal supply price will equate the MSNP of resources in the industry with the MSNP of resources in general.

By similar reasoning, Pigou substantiates the converse of this thesis, namely, that when the MSNP is less than the MPNP, actual output is below ideal output and a subsidy or bounty may be used to increase national dividend.

When a subsidy or bounty is granted, Pigou assumes that "the funds for the bounty can be raised by a mere transfer that does not inflict any indirect injury on production."[24]

For what seems to be distributional reasons, Pigou is opposed to paying subsidies to monopolized decreasing cost industries. He suggests, however, that a properly administered tax may drive the output of a monopolized increasing cost industry down towards the ideal output, if it is initially above ideal output.

An interesting aspect of this discussion which should be emphasized is that the decreasing, constant, and increasing costs to which Pigou refers conform to the laws of increasing, decreasing, and constant costs *simpliciter*, or from the viewpoint of the industry, which in each case

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[24] *Ibid.*, p. 224.

is assumed to be a competitive industry.

This is the essence of Pigou's discussion; in actual fact, he considers numerous variants of the above cases and adds several qualifications when it comes to considering specific industries. Extensive as his discussion seems, it has generated some notable controversy.[25]

Part II

The criticism which Pigou's analysis generated clarified many issues and the controversy developed new emphasis.

The participants were now essentially concerned with internal decreasing costs in non-competitive markets. The rationale of this approach was simple: Robertson had demonstrated that external decreasing costs were the result of internal decreasing costs elsewhere in the economy, and Knight, following Young and Robertson, had emphasized the

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[25]The controversy was initiated by Allyn Young, "Pigou's Wealth and Welfare", Quarterly Journal of Economics, XXVII (November, 1913), 672-86, and several years later rekindled by Sir John Clapham, "Of Empty Economic Boxes", Economic Journal, XXXIV (September, 1922), 305-14, which provoked a reply by Pigou, "Empty Boxes: A Reply", Economic Journal, XXXIV (December, 1924), 458-65. D.H. Robertson kept the witty "Empty Box" controversy alive with "Those Empty Boxes", Economic Journal, XXXIV (March, 1924), 16-31. F. H. Knight's "Fallacies in the Interpretation of Social Cost", Quarterly Journal of Economics, XXXVIII (November, 1923), 582-606, is also important.

Pigou displayed considerable sensitivity to criticism directed at his analysis and incorporated much of his critics' advice into successive editions of The Economics of Welfare. For this reason, the above outline, based on the fourth and last edition, is not open to much of this early criticism.

impossibility of having continuing internal decreasing costs in a competitive industry. Ruggles dates the emergence of the new approach from H.D. Dickinson's "Price Limitation in a Socialist Community",[26] which appeared in the Economic Journal for 1933. Since most of Dickinson's proposals are more adequately dealt with by other authors, a brief summary of his proposal will suffice here.

Dickinson explicitly suggested that marginal cost[27] as the pricing criterion would lead to maximization of social welfare. He conceived of a "marginal cost equalization fund" which would be financed by a tax levied on increasing cost industries and from which subsidies would be granted to decreasing cost industries. Any surplus or deficiencies in the fund would be added to or drawn from general taxation funds.

In the same year, Maurice Dobb[28] attacked Dickinson's proposal on the ground that marginal cost pricing may only move the economy to a Pigouvian relative maximum. Dobb also suggested that it was naive for Dickinson to equate an in-

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[26] H.D. Dickinson, "Price Limitation in a Socialist Community", Economic Journal, XLIII (June, 1933), 237-50.

[27] Dickinson was among the first to use the term "marginal cost" in the marginal cost pricing controversy. Unfortunately, he was rather uncertain in his handling of the new term.

[28] M. Dobb, "The Problems of a Socialist Economy", Economic Journal, XLIII (December, 1933), 588-98.

crease in production with an increase in welfare. Dobb was also among the first to question the appropriateness of trying to increase welfare without first having a clear idea of what welfare is. It is surprising and worthy of note that the participants in the marginal cost controversy, and indeed most of the new welfare economists, have not been more disposed to clarify what they had hoped to maximize. The vague notions of economic welfare as opposed to some sort of general welfare, introduced into the literature by Pigou, have not crystalized into more useful conceptual tools.

Dobb's article precipitated a controversy between himself and A.P. Lerner. Interesting as this skirmish is, much of it is extraneous to the present discussion. It did, however, raise issues which were later subjected to fruitful consideration.

Of particular relevance to the present discussion was the question of whether or not advocacy of marginal cost pricing necessitated interpersonal comparisons of utility. To many economists at this time, interpersonal comparisons loomed as the only value judgments which they might possibly be quilty of making. Dobb believed that Lerner's analysis required interpersonal comparisons and therefore should be discredited. In charging Lerner with making interpersonal comparisons, he was in fact charging him with making value judgments.

The Dobb-Lerner controversy had the unfortunate effect of associating the merits and demerits of marginal cost pricing with comparisons of socialist and capitalist economies. Some authors, notably L.M. Fraser, Joan Robinson, H. Chamberlain, and R.F. Kaldor, rose above this aspect of the debate which threatened to become rather sterile.

The reviviscence of the controversy fell to Harold Hotelling. His elixir came wrapped in "The General Welfare in Relation to Problems of Taxation and of Railway and Utility Rates" which appeared in the Econometrica for 1938.[29] Hotelling preferred to ignore his immediate predecessors and find inspiration in the work of Jules Dupuit which appeared in the 1840's. Dupuit's and Marshall's work appear to have a striking resemblance. Using interpersonal comparisons of utility and a concept of measurable utility, Dupuit defines the total benefit of a public enterprise as the aggregate of the maximum prices which a perfectly discriminating monopolist could charge, corresponding to the cost of the best alternatives and its use. Hotelling states:

> He pointed out the weakness of calling the value of a thing only what is paid for it, since many users would,

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[29] H. Hotelling, "The General Welfare in Relation to Problems of Taxation and of Railway and Utility Rates", Econometrica, VI (July, 1938), 242-69.

> if necessary, pay more than they actually do pay. The total benefit he measured by the aggregate of the maximum prices that would be paid for the individual small units of the commodity . . . corresponding to the costs of alternatives to the various users.[30]

The total benefit or "optimum of the general welfare," Dupuit argued, corresponds to the sale of everything at marginal cost. In the "General Welfare", Hotelling hoped to "bring down to date in a revised form" Dupuit's thesis. Unfortunately for some, he does this with the aid of mathematics. The "bring down to date" really consisted of generalizing Dupuit's argument "but without depending in any way on consumers' or producers' surpluses."

Hotelling set his analysis in the framework of a state in which:

> . . . income and inheritance taxes are used to pay for the construction of bridges, roads, railroads, waterworks, electric power plants and like facilities, together with other fixed costs of industry, and in which the facilities may be used, or the products of industry consumed, by anyone upon payment of the additional net cost occasioned by the particular use or consumption involved in each case.[31]

Under these assumptions, Hotelling demonstrates the validity of what he advances as a fundamental theorem, which, if the reader has the fortitude to accept another quote, is as follows:

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[30] Ibid., p. 245.

[31] Ibid., p. 249.

> . . . if a person must pay a certain sum of money in taxes, his satisfaction will be greater if the levy is made directly on him as a fixed amount than if it is made through a system of excise taxes which he can to some extent avoid by rearranging his production and consumption.[32]

From this, Hotelling suggests that a necessary but not sufficient criterion for the maximization of general welfare is that all sales should be at marginal costs. The imposition of excise taxes would necessarily prevent reaching a Pigouvian relative maximum. In effect this precludes the possibility of attempting to reach a relative maximum by a unit tax on increasing cost industries. The converse, that decreasing cost industries should not be subsidized, does not follow.

The criterion of maximizing welfare in a decreasing cost industry is that each sale should be made at marginal cost; this of course means that the industry must receive public assistance or find some other source of revenue, for example, multi-part pricing or license fees. Hotelling suggests that when the marginal cost falls very low, the high cost of producing the initial units should be regarded as a fixed cost. He closes this phase of his discussion by adamantly denying that the industry should attempt to

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[32] Ibid., p. 251. Curiously, Hotelling did not believe that an income tax would disturb the marginal conditions. Frisch later suggested that Hotelling was in error and Hotelling promptly conceded the point.

cover its costs.

Wisely, Hotelling recognized that subsidies for the decreasing cost industries must be raised so that the marginal conditions are not disturbed. He favours taxing the site value of land, income taxes, inheritance taxes. The state may also exploit a situation where demand exceeds supply, and thus raise further funds. Hotelling offers two examples where this might be done. The first is for railway seats during "peak" traffic; the second would require the government to regulate or tax "attention." By "attention" Hotelling seems to mean advertising in all its manifestations.

Implicitly, Hotelling assumes that it will be inevitable that the methods used for raising the money for subsidies will affect income distribution. He says that "there would exist a possible system of compensations and collections such that everyone would be better off than before." In practice, an increase in the general welfare may be purchased at the expense of the individual. The objection that benefits may be paid for by persons who do not receive them is, to Hotelling's mind, rather teneous. The benefits of any single project are usually so widely diffused that it is difficult to determine who may not benefit; moreover, in any country the distribution of projects is likely to be such that the distribution of benefits

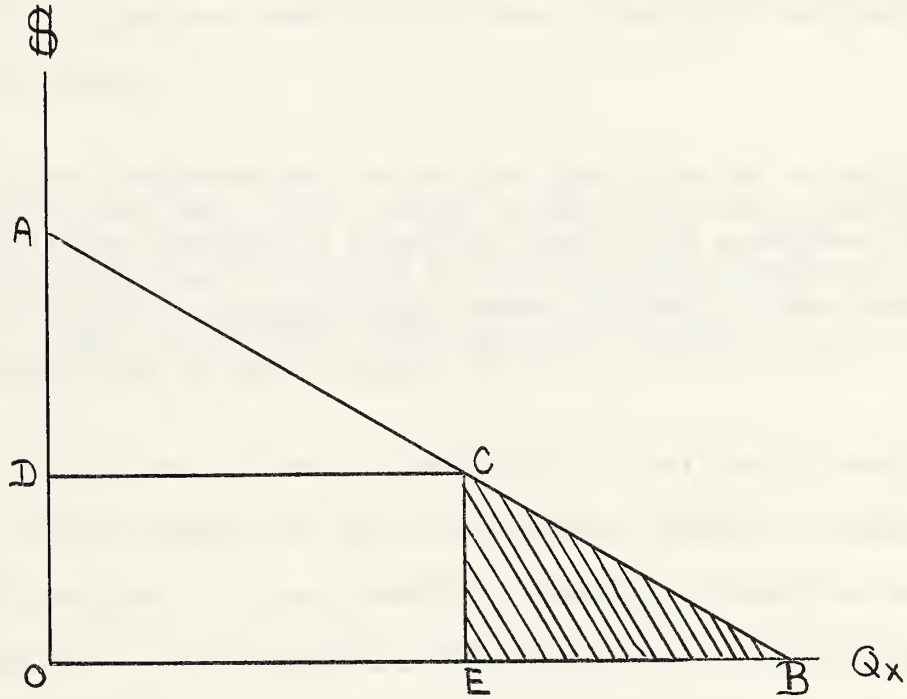
will fall so that everyone is better off than he would be in the absence of the government program. Ultimately, however, there may be some individuals who are prejudicial to the program, or prejudiced to it, by a series of small uncompensated losses.

Next in Hotelling's schema comes a section distinguishing optimum from competitive conditions. Only in a relatively few industries, such as agriculture, are the competitive forces strong enough to ensure that sales are made at marginal cost. It is difficult to imagine how a bridge could be competitive in the same way as the farm unit. If, however, it was perfectly competitive, tolls imposed on it would soon drop to zero, and the "owners would retire in disgust to allow anyone who pleases to cross free." Excluding the possibility of over-crowding, the bridge will now be operated most efficiently because the marginal cost and selling price are equated at zero. Using the accompanying diagram, adopted from Dupuit, Hotelling shows the loss of general welfare resulting from the imposition of tolls.

If the bridge could be crossed free, the total benefit derived from its use would be equal to the area under the demand curve AOB. If, on the other hand, a toll of OD is imposed, the net benefit to those using the bridge decreases to ADC; those to whom the tolls accrue benefit to the extent

of DCEO, or the amount of the tolls; therefore, the loss of general welfare to the society as a whole is CEB. If some account is taken of the small marginal costs of an extra passenger or extra shipment of freight, the same argument could be applied to the railroads.

Figure 5



There is a threat that the free facility may become over-crowded. Should this happen, Hotelling suggests imposing a "rent," which for passenger trains would be comparable to a fare, but which would only be designed to limit the demand to the available supply. The funds raised in this way would go to defer part of the overhead costs.

Obviously if marginal cost pricing is enforced, new bridges and new railways will not be built by private investors, for their customary criterion of a worthwhile investment, a profit, will not be met. The criterion used by private investors, namely, that $\sum p_1 q_1$, or total revenue, shall exceed the sum of operating costs and carrying charges must be replaced by something else. Hotelling proposes that the private investors' criterion be superseded:

> A less conservative criterion than that of a sufficient revenue for total costs is that if some distribution of the burden is possible such that everyone concerned is better off than without the new investment, then there is a *prima facie* case for making the investment. This leaves aside the question whether such a distribution is practicable.[33]

This is the marrow of Hotelling's original contribution. In the course of the controversy, which it subsequently excited, it was greatly elaborated upon. As might be expected of any proposal which threatens the supremacy of the private investor, there was no paucity of critics.

The first pair of eyes to peep through the chinks in Hotelling's armour belonged to Ragnar Frisch.[34] What he saw

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[33] *Ibid*., p. 267.

[34] Ragnar Frisch, "The Dupuit Taxation Theorem," *Econometrica*, VII (April, 1939), 145-50, and, "A Further Note on the Dupuit Taxation Theorem," 156-7.

led him to advance four objections. He began by admonishing Hotelling for leading the reader to believe that a necessary, but not sufficient condition, for reaching an optimum is abolition of all excise taxes. Benignly, he offers the suggestion that it is not necessary for price to actually equal marginal cost; all that is required is that they are everywhere in the same proportion to marginal cost. Unfortunately, Hotelling agreed with Frisch in his rejoinder "The Relation of Prices to Marginal Cost in an Optimum System." He writes:

> Professor Frisch correctly points out that these optimum quantities may in theory be achieved without the actual prices being equal to the marginal costs. It is enough that all prices be proportional to marginal costs; and this could theoretically be the case if every commodity and service were subject to a tax proportional to its marginal cost.[35]

Hotelling does, however, question the practicability of making all excise taxes equal to marginal costs. For reasons which will be scrutinized shortly, Lerner, Samuelson, and Coase have pointed out that proportionality is not sufficient.

As we have already seen, Hotelling believed that the interests of some small groups, especially the rich and land speculators, may be sacrificed. It was in this point that

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[35] H. Hotelling, "The Relation of Prices to Marginal Cost in an Optimum System," Econometrica, VII (April, 1939), 151-55.

Frisch founded his second objection. Hotelling's original definition of welfare and a movement towards an optimum had been borrowed from Pareto and was intended to circumvent interpersonal comparisons of utility. Frisch questioned whether Hotelling could claim at the same time to have avoided interpersonal comparisons and to claim superiority for marginal cost pricing, since he believed some groups would be prejudiced by the system.

Hotelling satisfactorily defended himself against Frisch's third objection which was based on an abstruse mathematical point.

Frisch's last poke through Hotelling's armour was also misdirected. He argued that the increase in the general welfare resulting from the government's spending the tax revenue should be taken into account along with the loss in general welfare resulting from the tax. He writes:

> The relevant question is, of course, what the government does with the money, and this must in all fairness be valued by applying the same sort of 'utility' principle to the good which the money in question enables the government to produce and distribute to the consumers free of charge (or at reduced cost).[36]

Hotelling's reply to this is that the relevant question is not what the government does with the money; rather, he

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[36] Frisch, "The Dupuit Taxation Theorem", p. 148.

points out, he begins by assuming that the government had decided to raise a certain amount through taxes and had asked what the most efficient way of raising these taxes would be.

The controversy now began to look like a controversy rather than a private correspondence between Hotelling and Frisch. At first, many of the worthies who joined the fray gave one the distinct feeling that they were groping for something to say. An exception to this was E.W. Clemens.

In "Price Discrimination in Decreasing Cost Industries",[37] he dispelled the clouds of confusion that hung over the distinction between long- and short-run marginal costs and their relevance to marginal cost pricing. These clouds were thickest in R.H. Montgomery's article, "Government Ownership and Operation of Railroads",[38] and it appears that Clemens' article was, in part, a protest against Montgomery's analysis. At best, Montgomery's work is confusing, if not confused. Here perhaps an appeal to Ruggles is appropriate. She writes:

> . . . Montgomery had misunderstood the nature of marginal costs when he laid down the principle that the extension

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[37] E.W. Clemens, "Price Discrimination in Decreasing Cost Industries", American Economic Review, XXXI (December, 1941), 794-802.

[38] R.H. Montgomery, "Government Ownership and Operation of Railroads", The Annals of the American Academy of Political and Social Science, CCI (1939), 137-45.

> of capacity should continue 'as long as the output which would be taken at incremental cost can be produced at lower average cost.'[39]

As the quote from Ruggles suggests, Montgomery, misinterpreting Marshall, had argued that output should be expanded until the lowest possible average cost was reached. Clemens countered Montgomery's suggestion by arguing that "the extension of the plant . . . should be halted while still in the region of decreasing costs in order to maximize social gain.[40] Using Figure 6, which had been employed by Lerner in an earlier article,[41] he argued that output should be expanded only to the point where marginal cost (MC) "universally defined" is equal to demand price. Apparently, MC "universally defined" is a long-run concept of MC. The AC, or long-run average cost curve of Figure 6, can be regarded as a "planning" curve; it represents the lowest average cost at which each output could be produced by any plant. The MC curve, which can be derived from the AC curve, "represents the marginal cost of

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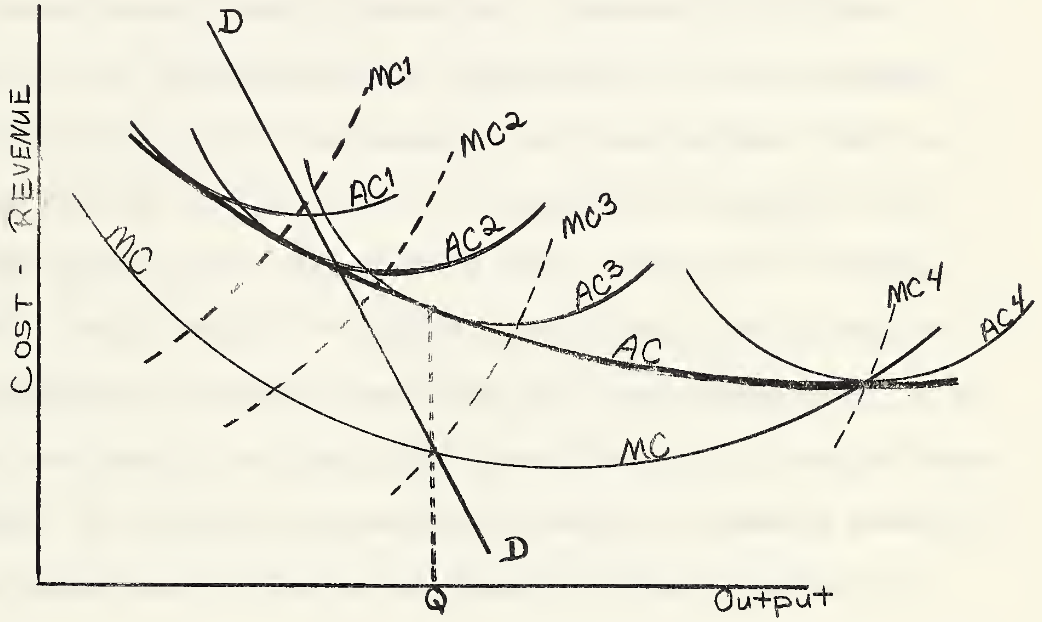
[39]N. Ruggles, "Recent Developments in the Theory of Marginal Cost Pricing", Review of Economic Studies, XVII (1950), 112.

[40]Clemens, op. cit., p. 798.

[41]A.P. Lerner, "Statics and Dynamics in Socialist Economics", Economic Journal, XLVII (June, 1937), 253-70.

expanding the plant."[42] The most "desirable" output for society is found at the intersection of the MC curve and the demand curve.

Figure 6



As a general rule, Clemens felt the principle could be stated: "Output should be increased until both long- and short-run marginal costs are equal to price." (In Figure 6 this would mean that output Q should be produced by plant AC_3.) Clemens goes on to say:

[42]Clemens' definition of the long-run marginal cost is awkward and apt to be misleading; presumably he would accept current definitions of the long-run marginal cost such as: ". . . the increase in total cost resulting from a one-unit increase in output when the firm has ample time to meet the increase in output by increasing the scale of plant." R.H. Leftwich, The Price System and Resource Allocation (New York: Rinehart & Company, Inc., 1955).

> The apparent necessity of distinguishing the two cases [i.e. long- and short-run MC] arises from the failure to recognize the essential similarity of marginal cost incident to capital expenditure and those incident to day-by-day operations. Both types are marginal costs and are indistinguishable as such if they still have to be incurred to produce a given incremental output.[43]

With this analysis, Clemens, as suggested, was able to dispel many unnecessary clouds but, apparently without knowing it, he multiplied the complexity of the marginal cost controversy. Most subsequent authors agreed that in the long-run all costs could be regarded as marginal but they hesitated at the suggestion that short-run "capital or fixed" costs should be fully subsidized. For those who were prepared to accept some form of state ownership, the problem was easily solved; for those unable to accept state ownership, it became increasingly complex. Clemens does not seem to have been bothered by these problems and he in fact went on to urge a third alternative which Pigou also entertained, but with many reservations. This was price discrimination. His theoretical justification was brief. Referring to Figure 7, he writes:

> The dashed lines in Figure 1 [7] illustrate the writer's argument. Marginal revenue under a discriminatory pricing system is represented by the broken line MR'. As price discrimination becomes more nearly perfect, the marginal revenue curve approaches the demand curve. The average revenue curve AR' does not coincide with the demand curve but lies above it. Thus an

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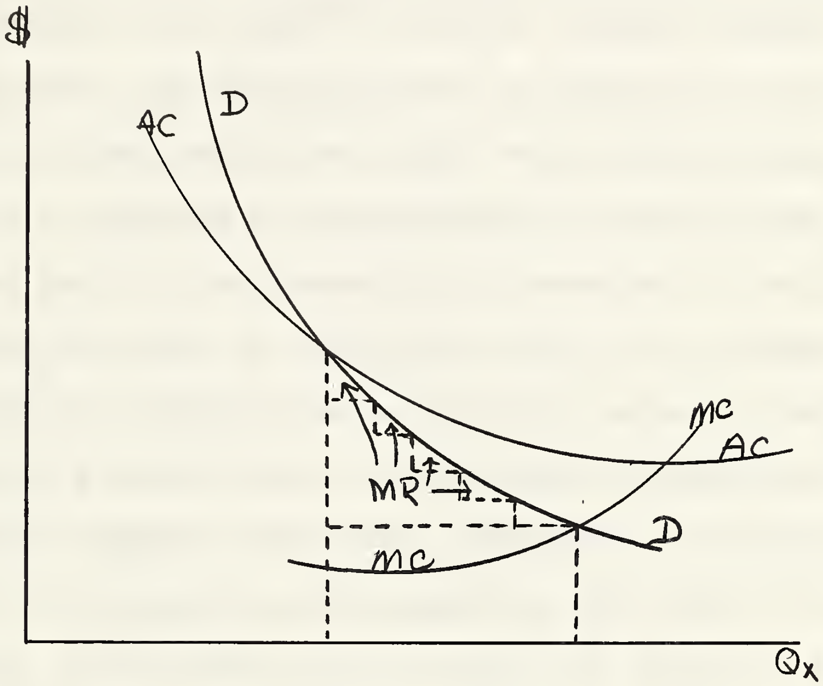
[43] Clemens, op. cit., p. 800.

industry for which the average cost curve lies continuously above the demand curve might operate profitably by means of price discrimination. It is conceivable that such a situation exists in the railroad industry.[44]

Figure 7



Clemens pointed out several advantages to discriminatory pricing and it is significant for the present outline of the controversy that they did not receive much attention.

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[44] Ibid., p. 797. In the preceding paragraphs, Clemens appears to suggest that a price given by the intersection of the demand curve and the AC curve should be charged and that discrimination should begin only after this demand has been satisfied. Elsewhere he suggests that discrimination should be practiced throughout the length of the demand curve until the intersection of the MC curve and demand curve is reached. If the demand curve does not intersect the AC curve, total revenues will not necessarily cover total cost; this is a point Clemens failed to mention.

Earlier Hotelling had been aware of this possibility but he rejected it out of hand and almost implied that there was something immoral and barbaric about it.

The next pair of polemists to contribute to the contestation was J.E. Meade[45] and J.M. Fleming. Meade, like Kahn, Frisch, and Hotelling, was an advocate of the proportionality thesis which was still very much in vogue. Meade begins his analysis by categorically accepting the postulate that the use "of the communtiy's resources is both most efficient and most in conformity with the consumers' wishes when they are distributed so that the value of the marginal product of a given factor is the same in each use."[46]

Meade suggests that when competition is technically possible, it should be encouraged by the state; this, he contends, is the best way to equate (or place in a fixed proportion) "the value of the marginal product of a factor and its price." In many instances, the encouragement of competition is neither practicable nor efficient; this is particularly true, for example, of utilities. Where workable competition is not feasible, Meade suggests that recourse must be had to nationalization. Thus he comes to the

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[45] J.E. Meade, "Prices and Output Policy of State Enterprise", <u>Economic Journal</u>, LIV (December, 1944), 321-28.

[46] <u>Ibid</u>., p. 321.

conclusion that:

> In these cases, socialism, in one form or another, of the industries concerned is the only radical cure to ensure that they are run in such a way as to equate marginal costs to prices of the product produced (or the prices of the factors of production to the value of their marginal products) rather than make a profit.[47]

Hence, Meade made explicit what Hotelling and Clemens overlooked and what Frisch only casually implied -- namely, that a government subsidized marginal cost pricing policy will, in practice, imply socialism. It must be recalled that it was over the question of socialism and its concommitant merits and problems that the debate of the 1930's went astray. Fortunately, the debate of the 1940's was not marred by these political intolerances, but Little laments that: "It was not always quite clear whether the contributors were trying to decide on the best price and output policy for public enterprizes in England . . . or for socialized firms in a fully collectivist economy."[48] But to return to Meade.

Upon the realization that socialism "in one form or another" would probably be necessary, Meade's discussion becomes an investigation of the problems which would arise

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[47]Ibid., p. 322.

[48]Little, op. cit., p. 185.

in the administration of nationalized industries which are pursuing marginal cost pricing policies. For Meade, a fundamental difficulty in his proposals is that of insuring economic and technical efficiency. The distinction between economic and technical efficiency runs through much of the controversy, although many authors have not found it a necessary distinction. Meade draws the distinction by suggesting that: a manager is technically efficient if he gets the maximum output from any given collection of factors of production; he is economically efficient is he combines factors in such proportions that the value of the marginal product is in each case equal to the market price of the factor. From this distinction, Meade proceeds to suggest that a state manager's performance must be assessed by reference to two criteria -- technical efficiency and economic efficiency. The latter criterion, economic efficiency, is presumably the more difficult to apply.

Partially offsetting the difficulties of assessing a state manager's performance is, Meade believes, the more simplified nature of the managerial function. The state manager need not, Meade argues, "consider the market question -- how much his extra sales will depress the price of his product and how much his extra purchases of factors will raise their prices."[49] Fleming found this far too pro-

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[49] Meade, _op_. _cit._, p. 324.

vocative a point to pass by without dispute, and he argues convincingly that the managerial function in a state enterprize does not differ substantially from that in private enterprize, even though the managerial objectives are different.

The problem of assessing a manager's performance looms large in Meade's mind, but, nevertheless, his discussion of the criteria which should be used to assess managers leaves very much to be desired and suffers from the same weakness as Hotelling's does -- it is not practical. For example, the answer to the question whether a manager should have undertaken further investment depends:

> . . . upon whether the total area under the consumers' demand curve in the new plant does or does not exceed the total areas under the relevant portions of the demand curves for the various goods, from the production of which the necessary factors of production are to be abstracted.[50]

The impracticability of a criterion constructed along these lines lies with the difficulty of securing reasonable estimates of the numerous demand curves which would be involved. Depending upon how seriously one views this problem of efficiency, Meade's whole proposal can be made to look ludicrous, and it is precisely at this juncture that many have chosen to attack marginal cost pricing.

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[50] *Ibid.*, p. 325.

Meade lumps his second group of problems under the rather innocous heading -- "budgetary implications." He begins this phase of his discussion by suggesting that the Principle underlying the whole proposal is to "socialize just those industries in which considerable economies of large scale production may be enjoyed . . ." and to operate these industries in such a way that the price charged for the product is equal to the marginal cost. Obviously these industries will be operated at a loss and their continued operation will require subsidization by other parts of the economy. It is possible that the losses incurred by their operation "may thus involve losses commensurate with the total income earned on property in the other sectors of the economy." Furthermore, it is almost certain that the raising of funds to finance the government's losses would interfere with the "best balance between work and leisure." The essence of the problem, then, is to find a way of financing decreasing cost industries without disturbing the marginal conditions.

Meade believes he has a practical solution to this problem. He argues that the socialization of decreasing cost industries should be accompanied by "some measure of public ownership of property." He does not elaborate on what he means by "some measure of public ownership" and the reader must impute what meaning he can to the phrase. His intentions are clearer. He hopes that government ownership of "property"

will provide funds to subsidize the decreasing cost industries. What he may hope for beyond this is not clear and, in fact, the fragment of his discussion is altogether too cursory to be very satisfying. In proposing a "measure of public ownership" of property, Meade should have given consideration to the effects on welfare which the transition of ownership would have entailed. Apart from the nebulous quality of the discussion, this omission is perhaps its greatest single deficiency.

In concluding, Meade notes what he considers to be two further advantages to be derived from the socialization of decreasing cost industries. First, and this should not require further explanation, it would lead to more extensive capital investment than would be had in a free enterprize economy. Secondly, socialism would involve a redistribution of income in favour of wage earners and away from investors. This shift would probably, Meade says, lead to a more equal distribution of income. One is almost embarrassed to point out the highly contentious assumptions on which this last "advantage" rests.

In most respects, Meade's discussion is less extensive and less satisfactory than the Frisch-Hotelling exchange. Perhaps his contribution could be summarized without injustice as follows: first, he explicitly recognized the likely necessity of socialization, and secondly, he pointed out that if substantial funds must be raised to subsidize the

decreasing cost industries, it would be very difficult to avoid disturbing the marginal conditions, particularly with reference to work and leisure.

J.M. Fleming,[51] who commented on Meade's article, was very generous in his appraisal. He suggested that parts are "a little over-simplified" and that it is only "in attaching greater importance to the administrative and less to the financial difficulties" that he differs materially with Meade's exposition. Our attention will be concentrated solely on these differences.

Fleming's first point was to question whether the necessary subsidization would be as extensive and burdensome as Meade supposed. He argues that it is possible, because of indivisibilities, that the marginal cost curve of an optimum plant at capacity will be discontinuous and thus it may be possible to earn rents or profits. He assumes, properly, that the type of industry which would be considered for nationalization would be one in which the optimum scale of plant exceeded that which would permit competition.

He concluded with a discussion of the "administrative" problems. He disagreed with Meade's proposition that the state manager's function would be easier than a free enter-

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[51] J.M. Fleming, "Comment", <u>Economic Journal</u>, LIV (December, 1944), 328-337.

prize manager's function. Nor could he visualize a suitable way of recognizing inefficient management. Managerial inefficiencies may possibly be enough to wipe out the benefits accruing from marginal cost pricing. The problem is further complicated, he implies, because the managers will have no incentive towards efficiency. Lastly, he suggests that it will be difficult to secure adequate management because the most able will enter private enterprize where the results of an outstanding performance will be recognized and rewarded. About this time, The Economics of Control by A.P. Lerner[52] appeared. In its broad outlines, Lerner's formulation of the principles of marginal cost pricing are not materially different from those which developed out of Hotelling's discussion. Lerner's discussion, however, is very much more extensive and hence has some unique characteristics. It was Lerner who first cast the concepts of marginal cost pricing into the "Rule." The Rule is:

> If the value of the marginal (physical) product of any factor is greater than the price of the factor, increase output. If it is less, decrease output. If it is equal to the price of the factor, continue producing at the same rate (for then the right output has been reached).[53]

The special contribution of Lerner lies not with his

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[52] A.P. Lerner, The Economics of Control (New York: The MacMillan Co., 1944).

[53] Ibid., p. 64.

enunciation of the famous Rule, but with his recognition of the necessity of meeting all the marginal conditions. This leads to the discrediting of the proportionality thesis which had enjoyed uninterrupted and unchallenged popularity since its inception by Kahn in the Economic Journal for 1935. It is difficult to find an isolated statement of the proportionality thesis in Kahn; but, the following passage appears to have supplied the raw material for its construction:

> It is not the absolute degree of imperfection of competition (or monopoly) but the deviation from the norm which determines the direction and magnitude of the deviation from ideal output. If competition were everywhere equally imperfect, there would be no case for interference.[54]

Translating this into more intelligible terminology, and borrowing from other parts of Kahn's article, we find that what Kahn is essentially suggesting is that if marginal cost is everywhere in the same proportion to price, the ideal output will be forthcoming and there will be no justification (in fact this would be detrimental) for granting subsidies or levying excise taxes designed to contract output.

Now for Lerner the ideal output could not be forthcoming

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[54]R.F. Kahn, "Some Notes on Ideal Output", Economic Journal, XLV (April, 1935), 22.

unless five marginal equalities were met. These can be set forth collectively as follows:

> Marginal Social Benefit = Value of Marginal Product = Marginal Private Revenue = Marginal Private Cost = Value of Marginal Factor (or price of the factor) = Marginal Social Cost.[55]

Following Lerner, we can see by inspection that it is impossible for the ratio between the value of the marginal product and the value of the marginal factor to be the same in all uses of all factors. Lerner writes:

> . . . it is not possible for the ratio between vmp and pf (or between p and vmf or between vmp and vmf) to be the same in all uses of factors unless this proportion is unity. In other words, they cannot all be proportional unless they are equal.[56]

<u>The Economics of Control</u> destroyed the proportionality thesis, but did not drive it and some of its allied misconceptions from the literature. Ruggles, in reference to Lerner himself, writes:

> He recognized the necessity for meeting all of the marginal conditions, including those of work and leisure -- but then, having recognized it, he proceeded to erect a structure which does not meet it.[57]

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[55]Lerner, <u>op</u>. <u>cit</u>., p. 76.

[56]<u>Ibid</u>., p. 102.

[57]Ruggles, <u>op</u>. <u>cit</u>., p. 114.

In actual fact, many later authors have been far more lucid in exposing the weaknesses of the proportionality thesis. Little, for example, points out that for the proportionality thesis to be valid, it is necessary, in the first instance, to assume that there is a fixed supply of the factors of production, and, secondly, that no goods are both final consumers' goods and factors of production. Drawing on L.W. McKenzie's article, "Ideal Output and the Interdependence of Firms",[58] he suggests that even these conditions are not sufficient if the inputs of the productive units consist of both "original factors of production" and "intermediate products." (This should not be confused with a good which is both an original factor of production and a final consumers' good.) If some productive units use intermediate goods and price is only proportional to marginal cost, then there will be a bias against the use of intermediate goods. Little concludes:

> All this is overwhelming against the proportionality thesis, viewed as a general theoretical proposition. But this is not the same as saying that it can have no practical value.[59]

Lerner's discreation of the proportionality thesis

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[58] L.W. McKenzie, "Ideal Output and the Interdependence of Firms", Economic Journal, LXI (December, 1951).

[59] Little, op. cit., p. 164.

appears to have given other dissenters courage, for now the whole concept of marginal cost pricing began to meet strong opposition.

The first murmurings of dissatisfaction came from R.H. Coase.[60] He began his short note by implying that the whole discussion was based on a value judgment which may be reconstructed in the comparative form as: It is better to eliminate discrimination than to permit it. Coase is not this explicit and it is unfortunate that his discussion is so brief; however, he writes:

> It has been a commonplace for economists to argue that a consumer should pay the cost of any product which he buys. The reason, as I understand it, is that the cost represents the value of the resources used to produce the product to some other consumer, or possibly even to the same consumer in another use. If the consumer pays either more or less than this amount, his money is not being allowed to command the same resources as it could in some other use or in the hands of some other consumer. There would be discrimination.[61]

Coase goes on to state that marginal cost pricing is a special application of the principle set forth in the quote. Advocates of marginal cost pricing contend that consumers should pay for additional units of a commodity only the value of the resources which go into them and Coase appears to

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[60] R.H. Coase, "Price and Output Policy of State Enterprize: A Comment", Economic Journal, LV (April, 1945), 112-13.

[61] Ibid., p. 112. A.W. Lewis, "Fixed Costs", Economica, XIV (November, 1946), 231-58 advances the value judgment that the consumer should pay the cost of any product which he buys. His contribution is omitted here for greater study in Chapter IV.

agree with this; however, he adds that this does not imply that total receipts ought not to equal total costs.[62] Arguing from the value judgment that discrimination ought to be avoided, Coase comes to the conclusion that if a policy of simple marginal cost pricing is pursued and total costs are not covered, discrimination has taken place in favour of the purchasers of the subsidized commodity:

> If consumers are charged a price equal to marginal cost it is true that the amount which consumers of the product pay for additional units is equal to the value of the resources used in producing the additional units of the product, but the total amount paid by these consumers would be less than the total value of the resources used in the production of the product.[63]

Thus, Coase concludes, a policy of simple marginal cost pricing is always likely to cause a redistribution of income. Because of redistributional effects, Coase believes that marginal cost pricing should be looked upon with suspicion and reservation. He returned to this theme (as we shall) in a later article.

A further quarrel with orthodox marginal cost pricing came from T. Wilson.[64] His criticism was based on a practical

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[62]If a simple policy of marginal cost pricing was pursued in a decreasing cost industry, total cost, of course, would not be covered.

[63]Coase, "Price and Output Policy of State Enterprize", p. 113.

[64]T. Wilson, "Price and Output Policy of State Enterprize: A Comment", Economic Journal, LV (December, 1945), 454-61.

objection. In surveying the literature, Wilson could find no workable criterion for further investment in socialized industry. He suggested that the mistakes made in the name of increasing the general welfare might be so great as to diminish it. He could offer nothing to put in the stead of the almost useless investment criteria of Hotelling and Meade, but he suggested that until this deficiency could be overcome, it was premature to even consider socialism for the purpose of enforcing marginal cost pricing.

In his second article, "The Marginal Cost Controversy",[65] Coase delivered a series of blows that put the advocates of marginal cost pricing on the defensive. Using his earlier article as a springboard, he emphasized the necessity of covering total costs if a misallocation of resources and indiscriminate redistribution of income were to be avoided. One of Coase's basic contentions was that variable costs and fixed costs did not deserve the sharp distinction imposed on them by some economists, for in the long-run, which for Coase is the only meaningful time period in the present context, all costs are variable. Pushing this line of reasoning further, it is possible, and Coase subscribes to this possibility, to argue that investment costs are, in the long-run,

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[65] R.H. Coase, "The Marginal Cost Controversy", Economica, N.S. XIII (August, 1946), 169-82.

a type of marginal cost which must be covered.[66] Coase, however, does not begin by grappling with this problem immediately; rather, he pauses to prepare the way by asking what optimum pricing is, and it is in this connection that he lays down two basic conditions of an optimum pricing system:

> The first would appear to be that for each individual consumer the same factor should have the same price in whatever use it is employed, since otherwise consumers would not be able to choose rationally, on the basis of price the use in which they prefer a factor to be employed. The second would appear to be that the price of a factor should be the same for all consumers since otherwise one consumer would be obtaining more for the same amount of money than another consumer.
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> . . . .
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> We thus arrive at the familiar but important conclusion that the amount paid for a product should be equal to its cost.[67]

On this basis, Coase goes on to argue that most previous writers assumed that the price to be charged for a commodity had to be equal to either the marginal cost or the average cost. Coase suggests that there is a third and more sensible alternative -- multi-part pricing. Using a cleverly-conceived example, Coase argues that the appropriate pricing policy, multi-part pricing, would be to have the consumer contribute to the "fixed costs" on a basis other than the actual amount consumed, that is so that his contribution towards the fixed costs is independent of the amount of his

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[66]This was Clemens' contention also.

[67]*Ibid*., p. 172.

consumption. However, he would be permitted to consume as many units of the commodity as he wished, at their marginal costs. Thus, Coase argued, multi-part pricing would satisfy both the marginal conditions and the criterion of uniform factor pricing.

It is significant that Coase's critics chose to attack him on the applicability and practicability of his proposal. One critic, J.A. Nordin,[68] gave substance to the belief that old ideas die hard by insisting that Coase was wrong in suggesting that prices need to be equal to marginal cost; rather he suggested that it is only necessary for them to be proportional to marginal cost. Among the other critics, two problems seemed to call for solution before Coase's proposal could be made workable. The first was that of distributing the fixed cost; to most critics it seemed impossible to distribute the fixed costs without either disturbing the marginal conditions or without playing havoc with notions of social equity or justice.

The case for simple marginal cost pricing and a closely-reasoned argument against multi-part pricing was advanced by William Vickrey in "Some Objections to Marginal Cost Pricing."[69] Without following Vickrey's exposition,

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[68]J.A. Nordin, "The Marginal Cost Controversy: A Note on Mr. Coase's Model", <u>Economica</u>, N.S. XIV (May, 1947), 134-49.

[69]William Vickrey, "Some Objections to Marginal Cost Pricing", <u>Journal of Political Economy</u>, LVI (1948).

we can note the conclusion which he came to.

First, he suggests that in most decreasing cost industries, even the best multi-part pricing plan will be unable to cover costs and at the same time achieve optimum consumption. His second point follows the first -- he believed that because of the difficulty of distributing the fixed and variable costs among consumers, a simple marginal cost pricing policy may be superior to a multi-part pricing policy. A third objection to multi-part pricing was that because of the requirement of covering all costs, "potentially worthwhile projects will necessarily be turned down," which would not be turned down under a simple marginal cost pricing policy. Fourthly, if an investment error is made, the consequences of the general welfare will be more serious if an attempt is made to recoup the loss as would be done under a multi-part pricing policy; on this basis, simple marginal cost pricing again appears to be superior. Fifthly, Vickrey finds that any scheme of discriminatory pricing is open to the same objections as fall upon multi-part pricing plans. Sixthly, in reply to criticism that the concept of marginal cost is elusive, Vickrey argues that in most cases, it is no more elusive as a basis for pricing than are average costs. His seventh point is that the violent fluctuation of marginal costs are not an argument against marginal cost pricing and that where administrative

costs are not prohibitive, price should fluctuate with marginal costs. Lastly, and this certainly seems to merit further attention, "the application of marginal cost pricing involves serious political and sociological consequences which must be investigated."

One of the last contributions to the controversy was made by A.M. Henderson,[70] who found the case against marginal cost pricing overwhelming. While many of Henderson's objections are to be found in the work of earlier authors, his exposition does have some unique features. Following paths outlined by Coase, Henderson enumerates four essential characteristics of a good pricing system. These are: first, that price determines the use made of the product by the consumer; by this he appears to mean that the price should determine how extensively the product will be used. Secondly, a price system should "serve as a guide to those responsible for production. This will result from managers attempting to maintain a particular relationship between price and costs." Thirdly, and this, like the last characteristic, is an administrative consideration, the rules for the pricing system must be practicable:

> They must be understandable, unambiguous, and refer only to data which those who have to apply them can estimate

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[70] A.M. Henderson, "Prices and Profits in State Enterprize", <u>Review of Economic Studies</u>, XVI (1949-50), 13-24.

accurately, and further, it must be possible to assess *ex post* the extent to which they have been followed.[71]

And lastly, the pricing system should provide an incentive for efficiency and economy.

Henderson applies these criteria to marginal cost pricing, "the standard economists' solution, the solution of Pareto and Barone" and finds eight major objections. Most were advanced by earlier authors and need only to be mentioned here: first, the concept of marginal cost is ambiguous; secondly, difficulties are associated with the proper level of investment in the industry; thirdly, loss will be incurred in decreasing cost industry and additional "costs" are likely to be incurred in financing the deficits; fourthly, an inflexible policy of marginal cost pricing precludes the possibility of using state enterprize as a means of indirect taxation; fifthly, imperfect competition in the private sector will lead to over-expansion of state industries if the latter pursue marginal cost pricing; sixthly, an inflexible policy may lead to difficulties in the employment of unemployed human resources; seventhly, it may be desirable to expand some industries beyond the output where demand price and marginal cost are equated, because of economies which its expansion will bestow on other industries; eighthly, he

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[71]*Ibid*., p. 16.

suggests that some forms of discrimination may be desirable as a means of correcting "inequalities of income."

Having noted these objections, Henderson comes to the conclusion that "as a policy, marginal cost pricing fails on all four criteria for a good pricing system."[72]

And this appears to be the point at which the controversy has stalemated.[73] Obviously, there are strong arguments both for and against marginal cost pricing. Even Vickrey, however, who is among the last to advance the "for" case, was unable to suggest how the subsidies for marginal cost pricing should be raised.

Following Little, we may summarize the objections to marginal cost pricing as follows:

> (a) a possible unfavourable redistribution of income; (b) the he-who-benefits-should-pay kind of argument; (c) the lack-of-a-criterion-for-indivisible-changes argument; (d) the fact that it may be impossible to cover overheads without increasing marginal taxation; (e) the fact that subsidization may tend to cause inefficiency by en-

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[72] *Ibid.*, p. 19.

[73] "The General Theory of Second Best" advanced by R.G. Lipsey and Kelvin Lancaster, *Review of Economic Studies*, XXXIV, No. 63 (1956), 11-32, has indicated that in the absence of MC equaling price in the private sector, marginal cost pricing in the public sector will not necessarily maximize "welfare." Since it is generally believed that MC and price are not equated in the private sector, it seems no longer possible to advance marginal cost pricing as a policy for maximizing welfare.

> couraging the idea that, since there is no harm in making a loss, costs do not matter much.[74]

The cumulative effect of these objections leaves the marginal cost principle badly battered. But if it is disregarded, what is the alternative? Of all the critics, only Coase and Henderson, and a few others, put forward alternatives, and these immediately bred critics of their own and fared little better than the marginal cost principle.

Ruggles suggests that the marginal cost controversy has been an attempt to answer three questions:

> (a) Is meeting these marginal conditions a sufficient basis for recommending a price system? (b) Does the marginal cost pricing system meet these marginal conditions? (c) Does the marginal cost pricing system, in fact, avoid any necessity for interpersonal comparisons?[75]

The very existence of the controversy proves these are complex questions which are perhaps impossible to answer generally. This appears to be the conclusion to which Little is driven:

> In my opinion, the detailed approach is the proper one to make; and generalities about price, marginal cost ratios, or the use of particular kinds of tariffs, are rather useless, and may easily be worse than useless.[76]

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[74]Little, op. cit., pp. 197-8.

[75]Ruggles, op. cit., p. 118.

[76]Little, op. cit., p. 201.

If one may end on a chauvinistic note, it appears that the only conclusion established unequivocably by this protracted controversy is that nothing, or very nearly nothing, can be said of a general nature. It is ironical that Marshall, after outlining the general principles, cautions against trying to apply them. He believed as Little does, that the only sane approach is to use the general principles as a framework on which to hang and study the details of each individual case.

CHAPTER IV

THE COMPENSATION PRINCIPLE: A MEANS OF CIRCUMVENTING VALUE JUDGMENTS IN ECONOMIC ANALYSIS?

Part I

As indicated earlier, this chapter is devoted to isolating the value judgments which underpin the economic analysis of the marginal cost pricing controversy. In isolating these value judgments it is necessary to draw heavily on the discussion of Part I of Chapter I. Having isolated the relevant value judgments, it is then proposed to use the compensation principle à la Little to see whether any value judgments may be circumvented in the analysis.

At the onset it is expedient to recognize a value judgment which was implicitly (and in a few cases, such as Pigou and Marshall, explicitly) held by all contributors to the controversy. This was "It is a good thing to increase the welfare of the community." Had this value judgment not been universally accepted by the contributors, the controversy could not have developed along the lines it, in fact, followed.

Following this initial value judgment, which shall be referred to as the paramount value judgment, a further judgment and its corollary were made by most authors. This judgment, a judgment of fact, was that a change in economic welfare would always result in a change in the same direc-

tion in welfare. That is, an increase (or decrease) of economic welfare would always result in an increase (or decrease) of welfare. Only four authors -- Marshall, Pigou, Dobb, and Little -- questioned the validity of this assumption. Yet having questioned it, they all found it a necessary assumption to make and they all made it more-or-less gracefully.

Following from the paramount value judgment and the judgment of fact that welfare and economic welfare are directly related came the corollary, a valuational judgment, with which much of the economic analysis appears to have begun. This is that "It is a good thing to increase the economic welfare of the community." In Chapter II it was indicated that for some economists responsible for the development of the compensation principle this replaced the paramount value judgment; in other words, they began their analyses, or appear to have begun their analyses, with the value judgment that: "It is a good thing to increase the economic welfare of the community." It was pointed out then that beginning from this value judgment has the advantage of eliminating the necessity of making a factual judgment or assumption about the relationship between "welfare" and "economic welfare." Fully counterbalancing this advantage, is the likelihood that it would be less-widely accepted. The choice of the value judgment with

which an economist qua economist should begin his analysis is problematical. If our paramount value judgment is accepted as the initial value judgment, he must make a factual assumption which many may be unable to accept. If he begins with the value judgment that: "It is a good thing to increase the economic welfare of the community," many will be unable to accept this. The choice open to economists seems to be this: they may risk having their recommendations rejected either because of an unacceptable factual assumption or because of an unacceptable value judgment.

As indicated earlier, the participants of the marginal cost controversy all seem to have begun with the paramount value judgment and proceeded by way of a factual assumption to the valuational statement that: "It is a good thing to increase the economic welfare of the community." This would seem to be the superior of the two approaches because the area in which dispute is likely to arise, the factual assumption, can be rationally contested. This of course would not be true if the analysis began with the value judgment: "It is a good thing to increase the economic welfare of the community."

The second value judgment on which the controversy depended raises rather more delicate problems. It is the same as the second value judgment necessary for Little's use of the compensation principle, namely, that "It is a

good thing to increase the economic welfare of an individual." This shall be referred to as the "second paramount value judgment." It should be recalled that by our understanding of a comparative value judgment this implies that it is a bad thing to decrease the economic welfare of an individual.

Unfortunately, only Little seems to have recognized the necessity of making this value judgment. Others appear to have pulled it into their analysis in discussion of the Paretian optimum. Pareto defined an optimum position as one in which it was impossible to make anyone better off without making someone worse off. By this definition of an optimum position, he hoped to establish an unequivocable criterion for an increase in welfare. If someone is made worse off it would be necessary to indulge in interpersonal comparisons to discover whether or not community welfare had increased. Because he intended to avoid making interpersonal comparisons, he excluded the possibility of making someone worse off. It is possible to read into Pareto's optimum the value judgment that: "It is a good thing to increase an individual's economic welfare," and the implied converse that: "It is a bad thing to decrease an individual's economic welfare." A <u>coup d'oeil</u> of welfare literature is all that is necessary to suggest that the Paretian optimum is responsible for impressing on Little and Samuel-

son and a few others the necessity of making this value judgment. Yet, if the analyses of most of the contributors to the marginal cost pricing controversy is to be logically complete, then this value judgment should not be left implied in the Paretian optimum, it should be made explicit. Those economists, following Marshall, who used interpersonal comparisons of utility would not need and probably would not accept this value judgment without modification. Marshall's free use of interpersonal comparisons of utility permitted him to maximize community welfare by decreasing the utilities of some (the rich) and increasing the utilities of others (the poor) until a pound's worth of resources had the same marginal utility for all men. Marshall would argue that "it is a good thing to increase the economic welfare of an individual (provided, of course, that this does not diminish 'welfare')," but only with reservation would he accept what we find implied in a comparative value judgment: "That it is a bad thing to decrease the economic welfare of an individual." His reservation would be that it is not a bad thing when it results in an increase in community welfare. A moment's reflection should reveal that any form of this value judgment would be a redundancy in Marshall's analysis. The paramount value judgment does not suggest anything about individual welfare, but it does about community or aggregate welfare; it implies that it

should be maximized. Marshall accepted, apparently without reservation, the paramount value judgment; the use of interpersonal comparisons of utility permitted him to proceed directly towards maximizing community welfare.

Marshall's apparent unqualified acceptance of the paramount value judgment and his use of interpersonal comparisons of utility not only makes our second paramount value judgment superfluous, they also make a value judgment on the distribution of income superfluous.

This should not be taken to mean that the use of interpersonal comparisons would always make the second paramount value judgment and a value judgment on the distribution of income superfluous; this was only the case in Marshall's analysis. Both a value judgment on the distribution of income and the second paramount value judgment could be used with interpersonal comparisons of utility and with the paramount value judgment. Now, however, they may constrain the maximization of the function of community welfare.

While the second paramount value judgment was unnecessary to Marshall's analysis it was vital to most others and especially to those who came subsequent to Hotelling. The adoption of the second paramount value judgment into these later analyses is necessary for two major reasons.

First, it acts as a constraint on the paramount value

judgment. Thus, it is a good thing to increase the welfare of the community subject to the qualification that the economic welfare of the individual is not decreased. It may seem irrational to desire to maximize the community's welfare on the one hand and to constrain it by a provision about individual economic welfare on the other. It may not be impossible to imagine cases where it might be possible to increase the community's welfare and an individual's welfare, but only by decreasing his economic welfare. For the economist there need not be anything "irrational" about this hierarchy of value judgments.

By casting the second paramount value judgment in terms of economic welfare, the economist accomplishes two things. He emphasizes the fact that his subsequent analysis applies only to "economic welfare" and not to "welfare," although it is expected to have important implications for the community's welfare. Secondly, it is a sufficient, but not necessary, step in relating an economic analysis to community welfare; it can be shown that by only sanctioning an increase in individual economic welfare the possibility of accepting a decrease in community economic welfare is precluded. Thus this second paramount value judgment has much the same analytical effect as the factual assumption that welfare and economic welfare are directly related, and consequently, it has much the same analytical result as be-

ginning the analysis from the paramount value judgment recast in terms of "economic welfare."

While most authors in the marginal cost controversy failed to recognize the necessity for the second paramount value judgment, they did make a factual assumption about the relationship between welfare and economic welfare. Once the second paramount value judgment is made explicit, the factual assumption may appear to be a logical redundancy. This, however, is not the case. The second paramount value judgment will relate individual economic welfare to community economic welfare, but without the factual assumption that community economic welfare and community welfare are directly related, we have no grounds for recommending a policy which will increase community economic welfare.

We come now to the second major reason for adopting the second paramount value judgment. By casting it in terms of individuals, the judgment is made that the prime concern must be for the economic welfare that accrues to the individuals who comprise the state and not to the state or community *per se*. This is not necessarily a rejection of the organic theory of the state. Whether the community as opposed to the individuals who comprise it can enjoy economic welfare is considered an irrelevant question.

It will be recalled that many of the arguments both

for and against marginal cost pricing were made on the grounds that it would have a favourable or an unfavourable effect on the distribution of income. Indeed it seems impossible to discuss marginal cost pricing without reference to its effect on the distribution of income. About the only thing concerning the distribution of income which the contributors were in general agreement over was that it could not safely be ignored. Their separate value judgments on what constituted the "proper" distribution are so varied that they defy attempts to press them into one very general value judgment. It seems sufficient to note that some rejected marginal cost pricing because of its incompatibility with a value judgment on the "proper" distribution of income. Others supported it because it suggested a means of achieving the "proper" distribution of income.

We now have a set of value judgments which the marginal cost pricing controversy (concommitant with the rejection of interpersonal comparisons of utility) seems to have necessarily presupposed. Without further value judgments it is impossible to order these value judgments within the set; each exists as an inflexible constraint on the others.

As Little has demonstrated, the same set is presupposed by the use or policy application of the compensation principle. Hence it is clearly impossible to eliminate

any of the value judgments in the set presupposed by the marginal cost pricing controversy by using the compensation principle. Any attempt to eliminate any one of these value judgments by using the compensation principle would mean that the compensation principle would have to be incorporated into the analysis. By incorportaing it into the analysis, the value judgment which it sought to eliminate would also be incorporated. Thus, for example, in recommending (or not recommending) a marginal cost pricing policy, a value judgment on the distribution of income cannot be avoided by using the compensation principle, simply because the compensation principle requires that a value judgment on the "proper" distribution of income be made.

Part II

The first part of this chapter has been devoted to the value judgments which the whole tenor of the marginal cost controversy seems to have logically presupposed -- what we have called the "set." In the remaining pages the value judgments, other than those discussed above, advanced by individual authors, will be studied. In some cases these may appear to be a variant of one of the value judgments of the set. This anomaly is not without explanation, and attention should again be drawn to the fact that the set was only implied in the work of a few scattered authors.

In general, there existed a lacuna between the economic analyses advanced by the contributors and their apparent desire to make policy recommendations concerning community welfare; this could only be breeched by the value judgments of the set, or by making similar value judgments explicit. Had the contributors chosen to accept the position, later urged by Myrdal, that the economist should make his value judgments explicit, it would not have been necessary to impose the set upon their analyses.

The set has not been crudely or unjustly imposed on the analysis of the marginal cost pricing controversy, and most of the contributors would likely be in sympathy with it. Attesting to this is the fact that none of the individual value judgments which we are about to isolate and examine are in conflict with those of the set.

It was seen in the preceding part of this chapter that Marshall's analysis involved a very simple set of value judgments -- one concerning community welfare and one on individual economic welfare. Pigou's more refined analysis requires a more complex set.

As noted in Chapter III, Pigou did not sanction all reorganization or "movements" of resources to equate MSNP's at a higher level of welfare. Without specifying how the comparison was to be undertaken, he required that

the cost of the movement be compared with the benefits which would result from the move to a higher level of welfare. It was also noted that this was essentially a comparison between a stock (the cost of movement) and a flow (the future benefits).

It is apparent that any attempt to compare the cost of movement with the expected benefits will require: first, some means of discounting the future benefits so that they are comparable to the cost of the movement; secondly, a time horizon or a definition of the period during which welfare is to be maximized. For brevity we may refer to the first of these complex problems as the selection of a discount rate and to the second as the selection of a time horizon.

The selection of a time horizon must either be an overt value judgment or based upon a value judgment or a set of value judgments. This is perhaps most readily seen if we confront ourselves with the two possible extremes -- the instantaneous maximization of welfare and its maximization through infinity. It seems clear that in selecting one of these alternatives we are saying something about our responsibility (or lack of it?) toward future generations. This is perhaps the most obvious way in which values enter into the problem. Thus the selection of a time period may be based on a value judgment and may not be a value judgment in its own right. For example, it may

follow as a corollary from a value judgment: "It is a good thing to be responsible to future generations, etc."; that "It is a good thing to maximize welfare through an infinite time period." It can be seen that this in turn implies a responsibility towards the unborn; we do no injustice to the problem but we do simplify it by assuming that the selection of a time horizon is an overt value judgment.

The fact that neither time nor human experience occurs in discreet units greatly complicates the selection of a time period other than an infinite time period. For example, if we choose the instantaneous maximization of welfare (or its maximization over a period of a year, etc.), it is possible to argue that our present welfare depends on the welfare of our children and that their welfare will depend on the welfare of their children. Thus, although we insist on the instantaneous maximization of welfare, it appears that we are concerned well in the future.

Although this argument can be forcibly presented, it should not be too readily accepted. If a value judgment is advanced insisting on the instantaneous maximization of welfare and then its sponsor suggests that his welfare depends on the future welfare of others, his value judgment may be dismissed as being academic because his time horizon was zero (<u>i.e</u>. he desired the instantaneous maximization

of welfare). The fact that he is concerned with the welfare of his children indicates that his time horizon reaches into the future. His value judgment on the instantaneous maximization of welfare and his welfare's dependence on the future welfare of others is a contradiction which he must rectify by restating his value judgment and expressing his true "feelings, tastes, or preferences."

Confronted with the necessity of making a value judgment on the appropriate time horizon, we may pose the question: Can the compensation principle be used to circumvent it? The answer is definitely "no." The reasoning behind this provides an insight into the possible uses of the compensation principle. The compensation principle requires that the prospective losers and gainers make intrapersonal comparison to decide on the one hand what compensation they would require to suffer their prospective loss and, on the other, what their gains will be. Now, for this very good reason that some of the gainers and losers are not yet alive, the necessary <u>intrapersonal</u> comparisons cannot be made. The mechanics of the compensation principle are unable to cope with a problem of this type. As Little has demonstrated, the compensation principle is inoperative unless we assume eternal and consistent individuals. This indeed circumscribes the use of the principle. For it to be

of any practical value, it must be used only when the time horizon is so short that individuals can be treated as "eternal."

While the selection of a time horizon will always be a value judgment, the appropriate discount rate may either be an overt value judgment or a factual assumption. We cannot foreclose on the possibility that the value judgment "It is a good thing that the discount rate is X" will be advanced. More often we would expect that it will be a factual judgment which it is hoped would reflect the "true" discount rate of the community.[1]

If the time horizon is short enough to permit us to treat individuals as eternal, then it will be possible to "circumvent" the necessity of making a factual assumption about the appropriate discount rate. Each individual could decide what present compensation he would require to suffer a future loss or what future compensation he would require to sustain a current loss.

If, however, the choice of the appropriate discount rate becomes the subject matter of a value judgment, the nature of the problem has substantially altered. Now, in-

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[1] If those making the factual assumption are confronted with an example of the Arrow Paradox, they will have to make a value judgment. That is, they will have to say that one of the discount rates is better than the others when they have no criterion for doing so.

stead of the discount rate being used as a means to maximize welfare through time, it is an end in itself. By making it the subject matter of a value judgment, we must incorporate it into the set where it may now act as a constraint on the maximization of the function of community welfare. (It is impossible to circumvent this in the same way that we were able to circumvent the factual assumption.)

The selection of a time horizon and a discount rate is a common prerequisite for all welfare proposals. It could be demonstrated that even Marshall's analysis, if it was to be put into practice, would logically require the specification of a time horizon and a discount rate. Marshall chose to ignore these problems when he discussed the Doctrine of Maximum Satisfaction (but, elsewhere he demonstrates that he is fully acquainted with the issues raised here). However, the later disputants in the marginal cost pricing controversy came to violent disagreement over a problem of a similar nature. Briefly, it was the question of whether price should equal short-run or long-run marginal cost.

For some, Montgomery vs. Clemens, for example, the dispute over whether price should equal short- or long-run marginal cost was theoretical and based on technical points of economics -- the meaning of MC. For others, it was a conflict of value judgments reinforced by theoretical ambiguities and misunderstandings.

Hotelling[2] is a valuable example of an advocate of equating price to short-run marginal cost. He argued that overhead costs should be regarded as lost "historic costs" and that no attempt should be made to recover these costs through a pricing system. As we have seen, he suggested that the funds for financing the deficit decreasing cost industries should be raised by taxation, and preferably by those forms of taxation which least disturb the marginal conditions. However, financing the deficit through general taxation would involve losses to those who did not benefit from increased production. Hotelling made the value judgment that small losses could be inflicted and then ignored but he added that "where losses involve serious hardship to individuals, there must be compensation . . . ."

It is worth emphasizing Hotelling's central role in both the development of marginal cost pricing and the compensation principle; furthermore, it should be noted that Hotelling was the first to advance the compensation principle. He attempted to apply it to problems of marginal cost pricing. It is curious that the later participants in the marginal cost pricing controversy showed no interest in the compensation principle and that the writers

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[2] H. Hotelling, "The General Welfare in Relation to Problems of Taxation and of Railway and Utility Rates", Econometrica, VI (July, 1958), 242-69.

on the compensation principle never returned it to its original content.

Hotelling had a second important use for the compensation principle. It could, he suggested, be used as a criterion for further investment. This is a particularly important application of the compensation principle, because, as Chapter III indicated, almost all authors felt that marginal cost pricing, unlike the profit motive, offered no guide for subsequent investment.

Hotelling, then, used the compensation principle to justify short-run marginal cost pricing and general taxation as a method of financing the deficit. This was an admirable use of the principle, but, unfortunately, Hotelling detracted from the force of his argument by making the value judgment that small losses could be ignored. We have also seen that he was criticized for his factual assumption that on the average the gains would cancel out any losses. This assumption could have been dispensed with altogether by thorough use of the compensation principle; or if we desired it as a working assumption, its validity could be tested by the principle.

Clemens, as we have seen, rejected the idea that price should be made equal to short-run marginal cost and he went on to argue that in the long-run all costs are marginal costs, and, therefore, price should be made equal to

long-run marginal cost. His answer to the problem of the level of investment in an industry would be that investment should be continued until long-run marginal cost equals price. Clemens, of course, recognized that long-run marginal cost price for a decreasing cost industry would result in a deficit, but he had little to contribute on how the deficit was to be financed.

Contrasted with Hotelling's view, Clemens would seem to be arguing for a longer time horizon. Hotelling's argument often sounds as if it is based on a given level of investment and his criterion for further investment, the compensation principle, is also a short-run view. Which approach is to be preferred depends on the time period during which welfare is to be maximized, and this, as we have seen, can only be decided on the basis of a value judgment.

An approach which offers a striking contrast to Hotelling's is that taken by Lewis.[3] Hotelling dismissed price discrimination as unworkable, Clemens considered it as an alternative to marginal cost pricing, but Lewis argued that, as a matter of "social justice" only price discrimination was acceptable. As Little[4] points out, Lewis'

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[3] W.A. Lewis, "Fixed Costs", Economica, N.S. VIII (November, 1946), 231-58.

[4] I.M.D. Little, A Critique of Welfare Economics (2nd ed.; London: Oxford University Press, 1957).

approach is more overtly ethical and he relates what a man ought to receive to the role he fills in the economy. He thus comes to say of the transfer of income which is necessarily involved in short-run marginal cost pricing (of decreasing cost industries):

> This transfer of income to the consumer is a gift which he never expected, to which he has no particular right, and which he will receive only temporarily while the excess capacity lasts.[5]

After citing this passage, Little adds with a tone of puzzlement:

> It appears, then, that Professor Lewis considers that a consumer ought to pay the whole long-run average cost of anything he consumes. This is a value judgment which is, by definition, extraneous to our concept of economic welfare.[6]

Perhaps all we need for our exposition is the conclusion that Lewis makes a value judgment from which he de-

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[5]Lewis, op. cit., p. 237. (Italics added.) It is not clear just what Lewis means by "no particular right". Conceivably he may mean one of two things. First, he may mean that income *must not* be transferred to the consumer; secondly, that income need not be transferred to the consumer. Much of his argument suggests that he believes that investors have prior rights which must not be flouted. We shall assume, perhaps unjustly, for purposes of our exposition, that what he means is that income must not be transferred to the consumer through a policy of marginal cost pricing.

[6]Little, *op. cit.*, p. 189.

rives the valuational judgment that: "Marginal cost pricing is a bad thing." Having made this judgment, and still desiring to "maximize" welfare, Lewis advances price discrimination as a suitable method, saying that: "Where there are escapable indivisible expenses to be covered, the case for discrimination is clear."[7] But as Little points out, the case is not clear at all because it rejects the value judgment that: "It is a good thing to treat people equally," and it presupposes the value judgment that: "It is a good thing that those who benefit the most pay the most." Even Lewis notes that the public "dislikes" discrimination, and he appears to suggest that there is something rational about the benefit approach and something irrational in desiring to treat individuals equally. Little notes with exasperation that at times Lewis' overruling principle is the ideal output argument (necessarily based on the second paramount value judgment), but, at other times, this principle gives way to the benefit approach. Little concludes that "he considered the he-who-benefits-ought-to-pay argument outweighed the ideal-output argument." We suggested earlier that before a set of value judgments can be ordered, it is necessary to have a value judgment which indicates how the ordering is to be done. Lewis gives no indication of what

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[7] Lewis, op. cit., p. 241.

value judgment he used to order his value judgments on the ideal output and the benefit approach.

We may now return to Clemens. It will be recalled that he offered discrimination as an alternative to long-run marginal cost pricing. This suggests that either he was not aware of the problem of "social justice" which Lewis drew attention to, or else that he considered it unimportant. Hotelling had also considered price discrimination but rejected it as impractical. Both Hotelling and Clemens seem to have been unaware that the choice of these alternatives could become the subject matter of a value judgment.

A later alternative to marginal cost pricing was that submitted by Coase -- multi-part pricing, which Nordin mistakenly referred to as a form of discrimination. Coase, like Clemens and Hotelling, did not become enmeshed in the question of whether individuals ought to be treated equally or whether discrimination was a good or a bad thing. He assumed that the object was to maximize economic welfare and that all price systems *per se* were acceptable. He does, however, make the value judgment that incomes should not be arbitrarily redistributed through a simple policy of marginal cost pricing. His search for an "optimal pricing policy" led, as we have seen, to his proposal for multi-part pricing.

Coase's argument that the price system should cover total costs, was based on the contention that it was a necessary condition for maximizing welfare. As indicated in Chapter III, Coase suggested "that if it is decided to use a price system, there are two main problems that have to be solved." The first is how much "money" each individual should have -- "the problem of the optimum distribution of income and wealth." The second is how prices are to be assigned to goods and services -- "the problem of the optimum system of price." Coase recognized that the first would necessitate a value judgment and attempted to absolve himself from making it by being concerned "only with the second." As later welfare economists have pointed out, this dichotomy does not, in fact, exist. The choice of an "optimum system of prices" will always have implications for the distribution of income, and therefore, Coase's attempt to avoid saying something about the distribution of income cannot be regarded as successful.

Enough has been said to indicate the areas in which value judgments arose, where they were contentious, where there was general agreement, and where they were largely unrecognized.

Neither the paramount nor second paramount value judgment received wide recognition from the participants in the marginal cost pricing controversy. It was not found,

however, that disputable issues could be traced back to either of the paramount value judgments. Value judgments on the distribution of income appear to have been responsible for much disagreement. As seen in Chapter III, many of the critics of marginal cost pricing condemned it because of its distributional implications. Coase goes so far as to suppose that some advocates of marginal cost pricing supported it because it would, in general, result in a distribution which would prejudice the wealthy. He suggested that Hotelling and Lerner were both influenced by this consideration.

In the examination of the set, it was indicated that the compensation principle could in no way "circumvent" any of these value judgments. However, in tracing the development of the compensation principle in Chapter II, it was seen that Scitovsky, Samuelson, and Little were all interested in the compensation principle as a criterion for an increase in economic welfare. Subject to the qualification which they found it necessary to impose on it, they concluded that it could be used to discover whether an individual's economic welfare had increased. In short, they found that it could be used to assess whether a change met the conditions set forth in the second paramount value judgment. Thus, while the principle could be used to determine whether the conditions of the second paramount value judgment had been satisfied, it could in no sense

circumvent it.

The second area of the analysis in which it was necessary to introduce value judgments was that of the choice of an appropriate time horizon. We saw here that, where a time factor is involved, the compensation principle is useful only if it is possible to assume that individuals are eternal. The compensation principle could not be applied to these problems without this assumption because the required intrapersonal comparison could not be made. The choice of a time horizon was at the bottom of the dispute of whether price should equal long-run or short-run marginal cost. Had the disputants attempted to make value judgments explicit, or had they shown any awareness of the value judgments implied by their analyses, much of this confusion would have been dissolved.

The only area where the participants often showed clear awareness of a value judgment was in the choice of a pricing system. Even Hotelling, who regarded discrimination as an impractical alternative, shows that he finds something unsavory about discrimination. Among the later contributors, and especially Lewis, Coase, Nordin, and Little, there was open recognition that the choice of a pricing system would be based on "ethical" considerations. Little, in fact, declares that we must "weigh" our value judgments in selecting a price system. It remains to be

seen if these value judgments can be circumvented. Our proof that they cannot be circumvented by the compensation principle applies to all value judgments. But to pursue our proof we need further distinctions.

By our definition, whatever else a value judgment may or may not be, it is a statement of an objective or of objectives; that is, it establishes certain conditions which it is desired to fulfill. This follows from our acceptance of Von Mises' basic assertion that value judgments are subjective expressions of "feelings, tastes, and preferences," and further, "that they impel the man who utters them to . . . action."[8] In fact, Von Mises writes:

> The mental acts that determine the content of a choice refer either to ultimate ends or to the means to attain ultimate ends. The former are called judgments of value. The latter are technical decisions derived from factual propositions.[9]

Here Von Mises makes the distinction we seek -- that between ends and means or method and objective -- value judgments are ends or objectives and the compensation principle, as the outline of its development should fully suggest, is a means or method. It can be used to assist us in making technical decisions. For example, it could be

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[8]Ludwig Von Mises, Theory and History (New Haven: Yale University Press, 1957), pp. 19-20.

[9]*Ibid*., p. 12.

used to assist in the decision of whether further investment should be undertaken (provided that we assume away problems associated with "time").

Once this dichotomy of objective and method is recognized, and once it is realized that value judgments are statements of objectives, the question of whether the compensation principle can circumvent <u>any</u> value judgment is easily answered.

A method cannot circumvent an objective, first, because methods are designed to make the realization of an objective possible, and, secondly, because, by definition, an objective is not to be circumvented. It follows that the compensation principle cannot circumvent <u>any</u> value judgment.

This conclusion has far-reaching implications for the future development of welfare economics. For, despite Little's work, the hope that welfare economics can be value-free has not altogether disappeared. Perhaps part of the reason these hopes linger on lies with Little himself, for rather than presenting a generalized "proof", he is disposed to show how in certain cases value judgments must be postulated before welfare conclusions can be reached. His insistance that welfare economics must have high-value content is based primarily on the argument that welfare terminology is an ethical terminology. He goes on to contend

that without this terminology, the subject is one "about which nothing interesting can be said." In reply to the rhetorical question whether a value-free terminology may be possible, he replies that it may well be, "but it would no longer be [the terminology] of welfare economics." We concur with this; what it would be is "pure" economic theory, and as such, it would have no recommendatory power which seems to be the very essence of welfare economics. While Little is not wrong, he does perhaps put his case too weakly by arguing that welfare economics cannot be value-free because it must employ an ethical terminology.

The realization of the dichotomy between a method and an objective, and the further realization that welfare objectives are set forth in value judgments, should discourage further attempts to find a method of circumventing value judgments in welfare economics. This conclusion rests on the concept of a definition of a value judgment that has been employed throughout this study. Neither the very hazy notions of a value judgment endorsed by the economists of the 1930's nor Little's concept of a value judgment would fully serve our purposes.

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